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North American Jumping Spiders of the Subfamily Marpissinae (Araneae, Salticidae)

By Robert D. Barnes[1]

The American jumping spiders have long been in need of revisional studies. Not since the works of George and Elizabeth Peckham at the turn of the century has much consideration been given to the systematic relationships of the salticid genera, although a large number of species have been described since that time.

Unfortunately the present relationships of some of the groups of American Salticidae are both unrealistic and systematically unnatural. There are two principal reasons for this condition. The first was the failure of early American workers to make proper comparisons with European species, and the second was a tendency to split the groups into far more genera than necessary. The latter situation was brought about largely through the work of Simon and the Peckhams who created a vast number of salticid genera based largely on the structure of the carapace and seemingly without regard to the genitalia. Many of these characters have been retained in modern keys. Results of the present study show that most of these criteria are extremely variable within any one genus. For example, in *Metacyrba* the width of the carapace varies from 60 per cent to 80 per cent of the length, and the median eyes may be midway between the anterior laterals and the posterior eyes, closer to the anterior laterals or closer to the posterior eyes. The position of the median eyes may even vary within the species in certain instances.

In the case of the Marpissinae the rectification of this condition ne-

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cessitates radical changes. The genera *Hyctia* and *Onondaga* must be abandoned and their species placed in *Marpissa,* while the American *Marpissa* must be removed from that genus and placed in *Metacyrba.* Such new combinations have the fortunate result of producing a much simpler classification, although the genera retained have a completely different complexion.

To what extent the Marpissinae represent a natural grouping is certainly open to question, and for this reason no attempt has been made in the present paper to define this subfamily. Any effort to identify correctly the major groups of salticid genera must be delayed until additional genera have been studied.

This paper is based in very large part on the abundant material in the collection of the American Museum of Natural History. The author wishes to extend his appreciation to Dr. W. J. Gertsch, who proposed that he make this study, for his many suggestions and advice during its progress. The author is also indebted to Dr. Herbert Levi of the Museum of Comparative Zoölogy for the loan of specimens from his personal collection and for his examination and drawings of certain specimens at the Museum of Comparative Zoölogy which the author was not able to visit. Grateful appreciation is also extended to Dr. H. K. Wallace of the University of Florida, Dr. B. J. Kaston of Connecticut State Teacher's College, Dr. Henry Dietrich of the Entomology Department at Cornell University, and Dr. J. F. Gates Clarke of the United States National Museum for the loan of specimens without which this study could not have been complete.

The types of all new species have been deposited in the collections of the American Museum of Natural History.

Measurements of the ocular area as used in this paper include the anterior median eyes.

SYNOPSIS OF THE MARPISSINAE IN NORTH AMERICA

Genus *Marpissa (Hyctia, Onondaga,* and European *Marpissa)*
- *Marpissa formosa* (Banks)
- *Marpissa bina* (Hentz)
- *Marpissa grata* (Gertsch)
- *Marpissa wallacei,* new species
- *Marpissa pikei* (Peckham and Peckham)
- *Marpissa robusta* (Banks)
- *Marpissa lineata* (C. L. Koch)
- *Marpissa sulcosa,* new species
- *Marpissa dentoides,* new species
- *Marpissa obtusa,* new species

Genus *Metacyrba (Metacyrba* and *Marpissa* of American authors)
Metacyrba taeniola (Hentz)
Metacyrba floridana Gertsch
Metacyrba punctata (Peckham and Peckham)
Metacyrba arizonensis, new species
Metacyrba undata (De Geer)
Metacyrba californica (Peckham and Peckham)

Genus *Menemerus*
Menemerus bivittatus (Dufour)
Menemerus vittatus (Banks)

Genus *Maevia*
Maevia inclemens (Walckenaer)
Maevia intermedia Barnes
Maevia expansa Barnes

Genus *Paramaevia*
Paramaevia poultoni (Peckham and Peckham)
Paramaevia hobbsae (Barnes)
Paramaevia michelsoni (Barnes)

MARPISSA C. L. KOCH

Marpissa C. L. Koch, 1846, Die Arachniden, vol. 13, p. 56. Genotype: *Marpissa muscosa* Clerck.

Hyctia Simon, 1876, Les arachnides de France, vol. 3, p. 18. Genotype: *Salticus nivoyi* Lucas.

Marptusa Thorell, 1877, Studi pui Ragni Malesi e Papuani, p. 224. Genotype: *Marpissa muscosa* Clerck.

Onondaga Peckham and Peckham, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 491. Genotype: *Maevia lineata* C. L. Koch.

Small to medium-sized jumping spiders with relatively flat carapaces. Width of carapace approximately two-thirds of carapace length, and height varies between 40 per cent and 60 per cent of carapace width. Sternum narrower anteriorly than base of labium. Eyes of anterior row subcontiguous, with anterior medians twice the diameter or slightly less than twice the diameter of the anterior laterals. Eyes of median row variable in position between anterior laterals and posterior eyes. Ocular area wider than long and occupying between 40 per cent and 50 per cent of carapace length.

First pair of legs two to three times as heavy as remaining legs. Order of leg length: 1:4:3:2 or 1:4:2:3. Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs.

Embolus of male palp very long and narrow and with a bulb-like base (E in figs. 1, 3, 4, 9, 35, and 40). The embolus rests against the outer edge of the alveolus for much of its length. Tegulum (T) large, sac-like, and protruding far out of the alveolus. When expanded the tegulum

half conceals the subtegulum (S) and base of the embolus. Cymbium with a deep sulcus along its entire prolateral margin. Tibia of palp with an apophysis of variable shape.

Genitalia of female (figs. 5, 14, 21, 24, 33, and 39) with a pair of long, coiled tubes to accommodate the long, narrow embolus of the male. Except in the case of *Marpissa pikei*, these tubes have separate openings into the epigynum.

Members of this genus are common in leaf mold and drift as well as low herbaceous and shrub vegetation.

The genus is represented in both Europe and North America. Heretofore this genus has included a number of American species, such as *Metacyrba undata* (De Geer) and *Metacyrba californica* (Peckham and Peckham), none of which properly belonged in it. Its American members now consist of species formerly placed in *Hyctia* and *Onondaga*, the latter two genera now becoming synonyms of *Marpissa*.

Marpissa muscosa (Clerck)

Araneus muscosus Clerck, 1757, Aranei Suecici, p. 116, pl. 5, fig. 12.

Aranea rumpfi Scopoli, 1763, Entomologia Carniolica, p. 401.

Aranea tardigrada Walckenaer, 1802, Faune Parisienne, insectes, vol. 2, p. 244.

Marpissa muscosa, C. L. Koch, 1846, Die Arachniden, vol. 13, p. 63, figs. 1129, 1130. Locket and Millidge, 1951, British spiders, vol. 1, p. 215, figs. 107B–D.

Marpissa rumpfii, Tullgren, 1944, Svenska Spindelfauna, Salticidae, p. 45, pl. 4, figs. 77–79.

This species, which is the type of the genus, has a wide distribution in Europe, is also known from Japan, and can be expected to occur across the northern Palearctic region. The selected bibliography above gives the essential synonymy and reference to the most important recent descriptions.

Marpissa formosa (Banks)

Figures 4–8, 9–11

Menemerus binus (Hentz), Emerton, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 239, pl. 19, figs. 4–4a (female). Name preoccupied.

Icius formosus Banks, 1892, Proc. Acad. Nat. Sci. Philadelphia, vol. 44, p. 76, pl. 5, fig. 31 (male).

Pseudicius binus, Peckham and Peckham, 1894, Occas. Papers Nat. Hist. Soc. Wisconsin, vol. 2, p. 110.

Hyctia bina, Peckham and Peckham, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 489, pl. 39, figs. 8–8d (male and female). Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 658. Comstock, 1940, The spider book, rev. ed., p. 685. Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 456, figs. 1644–1645 (male, female). Chickering, 1944, Papers Michigan Acad.

Sci., vol. 29, p. 163, figs. 44–49 (male, female). LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, no. 2, p. 462.

FEMALE: Total length, 7.00–9.00 mm.

Carapace dark brown, darkest in ocular area and becoming lighter on sides and posterior declivity. Margin with a narrow black band and occasionally with a narrow submarginal band of white scales. Scattered long black hairs around eyes. Clypeus with tufts of long white hairs which extend back beneath middle eye row. Chelicerae brown; endites and labium brown, with proximal parts dusky and tips pale. Sternum pale brown, with dusky margins. Palps yellow, with a pair of dark, short, lateral, longitudinal bars on patella, tibia, and tarsus. First legs brown, with the distal ends of the segments darker. Remaining legs straw yellow. Dorsum of abdomen with a pale basal band and a median chalky band. The latter becomes indented in the posterior half of the abdomen and is flanked along its entire length by blackish brown maculations. Sides of abdomen pale, with short scattered blackish bars. Venter pale, with a wide median black band.

Width of carapace two-thirds of length, with widest point two-thirds of distance from anterior margin. Height slightly less than one-half of width (18:41). Carapace relatively flat above, with posterior declivity confined to the posterior fourth. Furrow of chelicerae with two small teeth on the anterior margin and a large single tooth on the posterior margin. First pair of legs at least twice as heavy as remaining legs.

Eyes of anterior row subcontiguous, with anterior median eyes twice the diameter of the anterior laterals. Eyes of second row one-third of the diameter of the anterior laterals and located midway between or slightly closer to the anterior laterals than to the posterior eyes. Third eye row slightly wider than first and eyes equal to anterior laterals in diameter. Ocular area wider than long (32:25) and occupying approximately 42 per cent of carapace length.

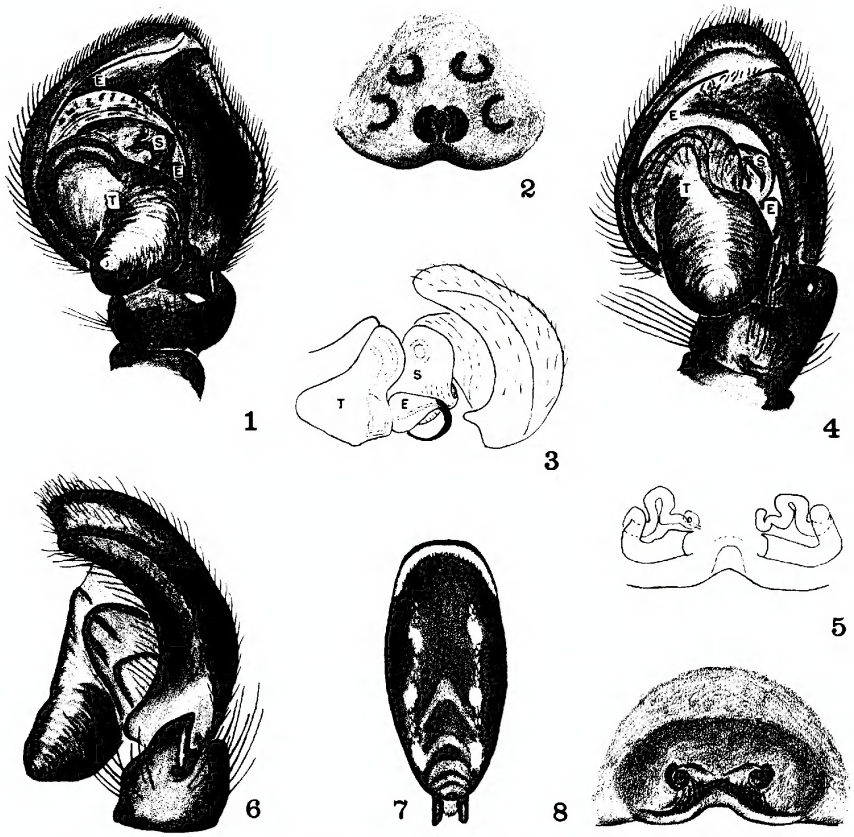
Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: an unpaired proximal and two pairs of ventrals.

Epigynum with a pair of simple rounded openings well separated and directed towards each. In a cleared epigynum the tubes are not highly coiled.

Measurements of a female from Massachusetts: Total length, 7.90 mm. Carapace: length, 3.50 mm.; width, 2.40 mm.; height, 1.06 mm. Patella and tibia: first leg, 2.76 mm.; second leg, 1.83 mm.; third leg, 1.70 mm.; fourth leg, 2.40 mm.

MALE: Total length, 6.50–8.13 mm.

Carapace deep mahogany, darker in ocular area and margin with a



FIGS. 1–3. *Marpissa muscosa* (Clerck). 1. Left palpus, ventral view. 2. Epigynum. 3. Expanded palpus, lateral view.

FIGS. 4–8. *Marpissa formosa* (Banks). 4. Left palpus, ventral view. 5. Female genitalia, dorsal view. 6. Left palpus, lateral view. 7. Dorsal abdominal pattern of male. 8. Epigynum.

Abbreviations: E, embolus; S, subtegulum; T, tegulum.

thin black line. A pale spot at each posterior lateral corner of ocular area which is covered by a patch of white scales. A pair of white scale patches on posterior declivity and a band of white scales along posterior sides of carapace. Scattered black hairs around eyes and patches of white scales between eyes of anterior row. Chelicerae brown. Endites and labium brown, with paler tips. Sternum dusky brown. Palps mahogany brown and occasionally clothed with white hairs. Tips of cymbium pale. Coxae and trochanters brown dorsally and pale ventrally, with mottled dusky markings. First pair of legs mahogany brown, with distal end of tarsus pale. A pair of longitudinal pale stripes on

dorsal surface of femur and tibia. Remaining femora dark brown, with distal ends pale and with a pair of thin dorsal longitudinal paler bands. Second legs with patella, tibia, metatarsus, and tarsus yellow. Third and fourth legs with patella, tibia, metatarsus, and tarsus yellow and dusky proximally. Abdomen dark brown with a basal band of white scales. Posterior two-thirds of dorsum with three pairs of pale spots which are overlain by a pair of broken bands of white scales. Posterior half of dorsum with a series of faintly paler chevrons. Sides of abdomen dark. Venter pale, with a median dark band.

Structure and eye arrangement as in female. Spination as in female. Tibial apophysis of palp with a single small tooth on the concave margin.

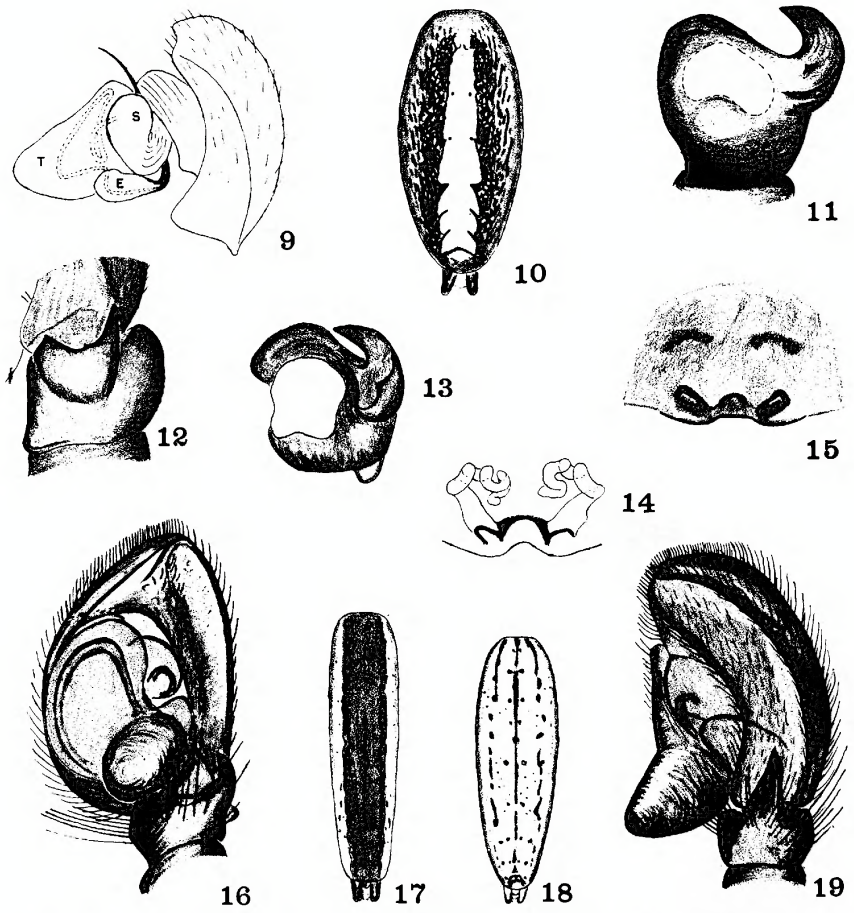
Measurements of a male from Michigan: Total length, 6.60 mm. Carapace: length, 2.82 mm.; width, 2.06 mm.; height, 1.06 mm. Abdomen: length, 3.70 mm.; width, 1.47 mm. Patella and tibia: first leg, 2.94 mm.; second leg, 1.82 mm.; third leg, 1.47 mm.; fourth leg, 2.06 mm.

COMPARISONS: This species has been commonly known as *Hyctia bina*. It is not, however, the species described by Hentz, and the earlier name of Banks must unfortunately be used. This is more completely discussed under the description of the following species.

TYPE LOCALITY: Banks's description is based on a male from the upper Cayuga Lake basin of New York State.

DISTRIBUTION AND ECOLOGY: This species is widely distributed throughout the eastern half of the United States where it is a member of herbaceous and shrub communities. Adults have been taken throughout the year.

RECORDS: *New York:* Long Branch, Onondaga, October 6, 1900, female; Great Kills, July 6, 1940 (B. Malkin), male, female. *New Jersey:* Ramsey, June, 1935 (W. J. Gertsch), two females. *Pennsylvania:* Tower City, June–July, 1935 (J. Herb), female; Shillington, June 20, 1937 (L. Hook), female. *North Carolina:* Pinehurst, May 30, 1938 (D. L. Wray), male. *Alabama:* Alberta City, June 5, 1941 (A. F. Archer), female; Little Dauphin Island, Mobile County, June 23, 1948 (A. F. Archer), female. *Mississippi:* Trimcane, June 12, 1903 (G. W. Herrick), male, female. *Texas:* Brownsville, December 1, 1934 (S. Mulaik), female; 5 miles southeast of Weslaco, July 21, 1935 (S. Mulaik), female; New Braunfels, August 19, 1935 (S. Mulaik), two females; Resaca, 5 miles southeast of Brownsville, September 26, 1937 (L. I. Davis), two females; Dallas, August 31, 1942 (B. Malkin), male; south fork of Trinity River, July 12, 1950 (M. Cazier), male, female. *Tennessee:* Kingston, female. *Illinois:* Near Scott Field, July 8, 1941 (C. and M. Goodnight), male,



FIGS. 9–11. *Marpissa formosa* (Banks). 9. Expanded palpus, lateral view. 10. Dorsal abdominal pattern of female. 11. Palpal tibia of male.

FIGS. 12–15. *Marpissa bina* (Hentz). 12. Palpal tibia of male, lateral view. 13. Palpal tibia of male, dorsal view. 14. Female genitalia, dorsal view. 15. Epigynum.

FIGS. 16–19. *Marpissa pikei* (Peckham and Peckham). 16. Left palpus, ventral view. 17. Dorsal abdominal pattern of male. 18. Dorsal abdominal pattern of female. 19. Left palpus, lateral view.

Abbreviations: E, embolus; S, subtegulum; T, tegulum.

female. *Indiana:* Vowler Park, June 23, 1903, two males. *Michigan:* E. S. George Reserve, Livingston County, July 28, 1951 (H. K. Wallace), four males and nine females; Osceola County, June 13, 1953 (R. R. Dreisbach), female; St. Joseph County, September 6, 1953 (R. R. Dreisbach), male.

Marpissa bina (Hentz)

Figures 12–15

Attus binus HENTZ, 1846, Jour. Boston Soc. Nat. Hist., vol. 5, p. 352, pl. 21, fig. 2 (female); 1875, The spiders of the United States, p. 54, pl. 8, fig. 2 (female).

Not *bina* of other authors.

MALE: Total length, 5.76–9.92 mm.

Coloration essentially as in *M. formosa.* Dorsum of abdomen may be covered with fine golden iridescent scales, and median longitudinal area between pairs of white spots may be distinctly paler than lateral portions of dorsum. Venter pale, with a single dark spot in front of spinnerets.

Structure of carapace, eye arrangement, and spination as in *M. formosa.* Tibial apophysis with a large, plate-like tooth along front margin in addition to a small single tooth on the concave margin.

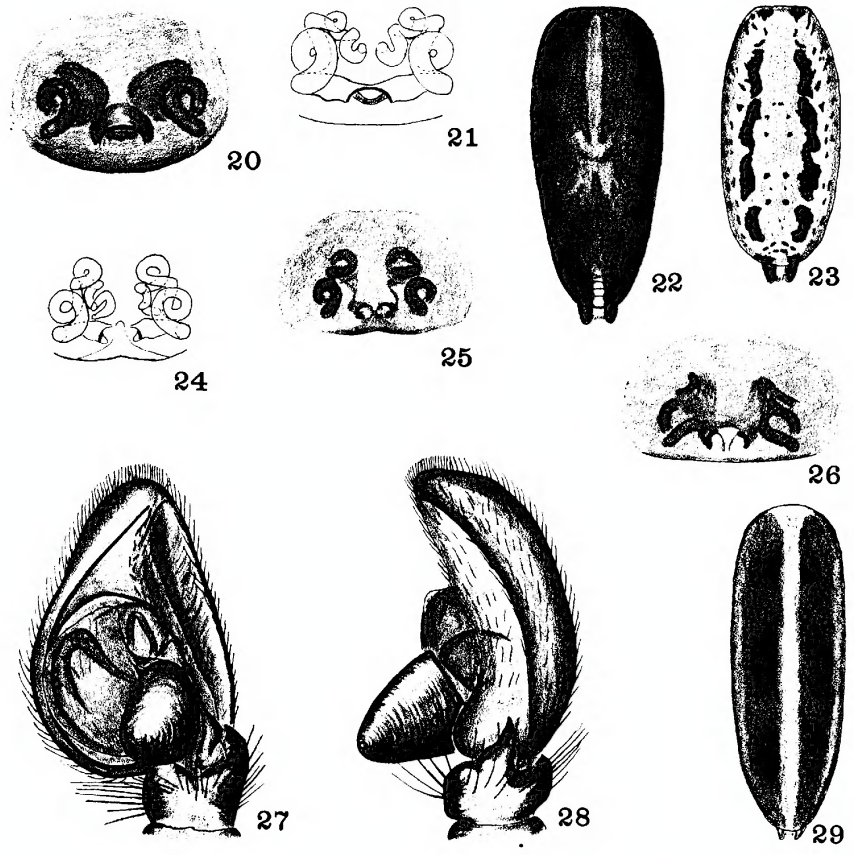
Measurements of a male from Florida: Total length, 9.50 mm. Carapace: length, 3.06 mm.; width, 2.12 mm.; height, 0.94 mm. Patella and tibia: first leg, 3.30 mm.; second leg, 1.89 mm.; third leg, 1.76 mm.; fourth leg, 2.36 mm.

FEMALE: Total length, 7.29–8.34 mm.

Structure and coloration as in *Marpissa formosa.* Openings of epigynum relatively low and directed downward.

Measurements of a female from Florida: Total length, 8.34 mm. Carapace: length, 3.64 mm.; width 2.64 mm.

COMPARISONS AND DISCUSSION: In 1846 Hentz described this species based on a female from the coast of South Carolina. Later American arachnologists considered it to occur throughout the eastern half of the United States. However, what has been thought to represent a single species is actually two distinct species, a northern and southern form. The more common species, *M. formosa,* has been previously included with *M. bina.* However, the two species are quite distinct. The male of the southern form has a distinct, large, plate-like tooth on the front margin of the tibial apophysis which is absent in the northern species. In the female the openings of the epigynum are lower and directed downward in the southern species. The range of the southern form extends from Florida up the Atlantic coast of the southern states at least as far as Beaufort, North Carolina, with the apparent exclusion of the northern species. Thus on the basis of Hentz's type locality he must have been describing the southern species, which therefore must take the name *bina,* while the more common and well-known northern form must unfortunately revert to Banks's *formosa.*



FIGS. 20–21. *Marpissa pikei* (Peckham and Peckham). 20. Epigynum. 21. Female genitalia, dorsal view.

FIGS. 22–25. *Marpissa grata* (Gertsch). 22. Dorsal abdominal pattern of male. 23. Dorsal abdominal pattern of female. 24. Female genitalia, dorsal view. 25. Epigynum.

FIG. 26. *Marpissa wallacei,* new species. Epigynum.

FIGS. 27–28. *Marpissa grata* (Gertsch). 27. Left palpus, ventral view. 28. Left palpus, lateral view.

FIG. 29. *Marpissa wallacei,* new species. Dorsal abdominal pattern of male.

TYPE LOCALITY: Hentz's description was based on a single female from Sullivan's Island near Charleston, South Carolina.

ECOLOGY: This species has been swept from intertidal grasses on the North Carolina coast (Barnes, 1953). Adults were taken in March, April, June, and July.

RECORDS: *North Carolina:* Beaufort, July 19, 1952 (R. D. Barnes),

male. *Florida:* Dickinson's Salt Marsh, Levy County, four males, female; Cedar Keys, July 12, 1925 (Hubbell), female; Gainesville, November 26, 1933 (H. K. Wallace), male; Alachua County, November 7, 1936 (H. K. Wallace), male; Port Mayaca, Lake Okeechobee, March 29, 1938 (W. J. Gertsch), male; Alachua County, December 12, 1948 (H. K. Wallace), female; Gainesville, November 14, 1952 (H. K. Wallace), male; Alachua County, November 25, 1952 (H. K. Wallace), female.

Marpissa grata (Gertsch)

Figures 22–25

Hyctia grata GERTSCH, 1936, Amer. Mus. Novitates, no. 852, p. 25, figs. 25–26 (male, female).

MALE: Total length, 4.50–6.00 mm.

Carapace dark to light mahogany brown, slightly darker in ocular area and margined with a thin black band. A pair of pale brown spots behind posterior eyes and a second pair of spots behind the first. Chelicerae and palps brown. Endites and labium brown, pale at tips. Sternum dusky brown. Legs pale yellow. Dorsum of abdomen dark brown, with scattered iridescent scales. Anterior half of dorsum with a slightly paler median longitudinal band ending in middle of dorsum in a pair of ill-defined paler blotches. Posterior tip of dorsum with a short series of three small white rectangles. Venter pale, with a median dark band. Posterior spinnerets dark, anterior pale.

Width of carapace 65 per cent of length, with widest point three-fourths of distance from anterior margin. Height slightly less than one-half of width (16:29). Carapace relatively flat, with posterior declivity occupying posterior two-fifths. Furrow of chelicerae with two small teeth on anterior margin and one tooth on posterior margin. First pair of legs three times as heavy as remaining pairs.

Eyes of anterior row subcontiguous with anterior medians, twice the diameter of the laterals. Eyes of second row one-third of the diameter of the anterior laterals and located approximately midway between anterior laterals and eyes of third row. Third eye row slightly wider than first and eyes subequal to the anterior laterals in size. Ocular area wider than long (24:20) and occupying approximately 45 per cent of the carapace length.

Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: tibia, two unpaired and one pair of ventrals; metatarsus, two pairs.

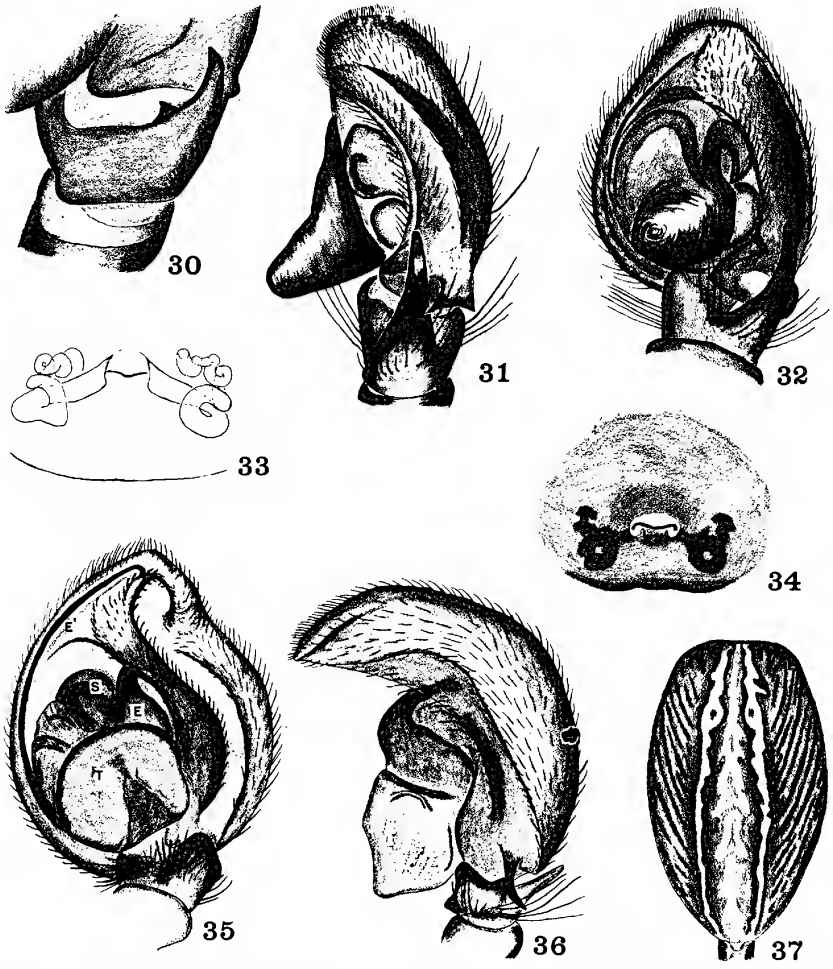


FIG. 30. *Marpissa wallacei*, new species. Palpal tibia of male, lateral view.

FIGS. 31–34. *Marpissa robusta* (Banks). 31. Left palpus, lateral view. 32. Left palpus, ventral view. 33. Female genitalia, dorsal view. 34. Epigynum.

FIGS. 35–37. *Marpissa lineata* (C. L. Koch). 35. Left palpus, ventral view. 36. Left palpus, lateral view. 37. Dorsal abdominal pattern of male.

Abbreviations: E, embolus; S, subtegulum; T, tegulum.

Inner margin of tibial apophysis of male palp provided with several small teeth, as figured.

Measurements of a male from Michigan: Total length, 5.76 mm. Carapace: length, 2.58 mm.; width, 1.70 mm.; height, 0.94 mm. Patella and tibia: first leg, 2.76 mm.; second leg, 1.37 mm.; third leg, 1.18 mm.; fourth leg, 1.64 mm.

FEMALE: Total length, 4.70–6.00 mm.

Coloration of carapace and appendages similar to that of male. Patella, tibia, and tarsus of palp with a pair of dark longitudinal bars on dorsolateral surface. Dorsum of abdomen pale, with a pair of irregular black bands running entire length and forming a broad median pale band between them. Within posterior half of median band are five paired dark spots. Anterior of dorsum with a narrow, pale, basal band. Sides of abdomen with many short, oblique, dark bars. Venter pale, with a median dark band. Spinnerets as in male.

Structure of carapace, eye arrangement, and spination similar to that of male. Epigynum as figured.

Measurements of a female from Michigan: Total length, 4.76 mm. Carapace: length, 2.18 mm.; width, 1.41 mm.; height, 0.72 mm. Patella and tibia: first leg, 1.41 mm.; second leg, 0.94 mm.; third leg, 0.84 mm.; fourth leg, 1.18 mm.

COMPARISONS: This species is similar to *Marpissa formosa* but smaller in size and differs in coloration and the presence of more than one tooth on the inner face of the tibial apophysis in the male. In the female the openings of the epigynum are much closer together than in *formosa*.

TYPE LOCALITY AND DISTRIBUTION: The original description was based on a male from Minneapolis, Minnesota. At the present time this species is known only from Minnesota and Michigan.

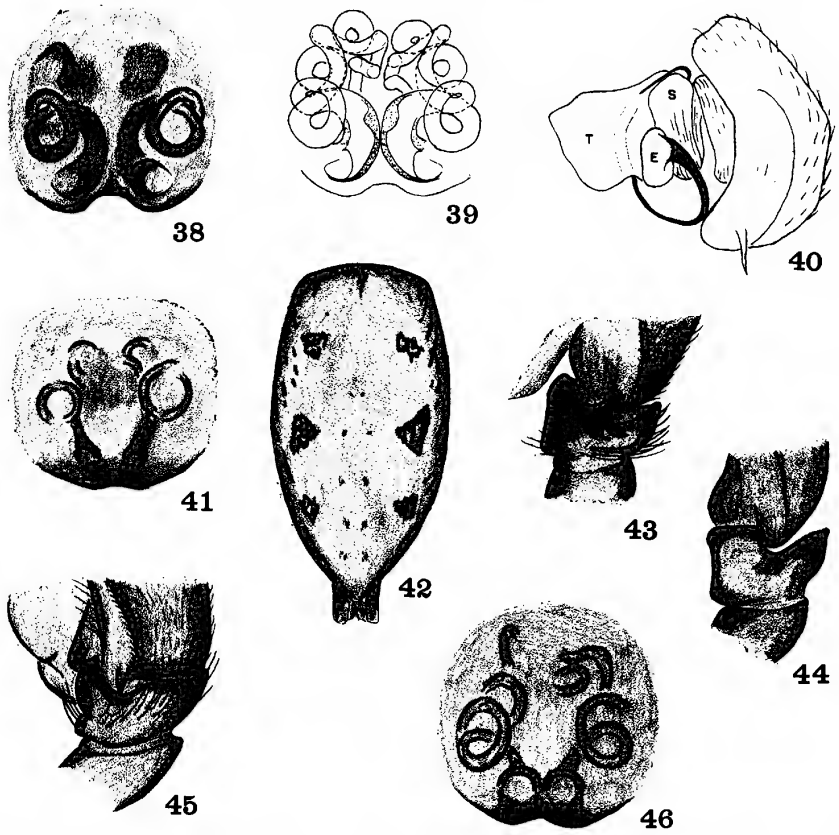
RECORDS: *Minnesota:* Minneapolis (Gertsch, 1936). *Michigan:* E. S. George Reserve, Livingston County, July 22, 1951 (H. K. Wallace), male, two females; August 20, 1951 (H. K. Wallace), male, female; July 12, 1954 (H. K. Wallace), two males; August 2, 1954 (H. K. Wallace), male, three females.

Marpissa wallacei, new species

Figures 26, 29, 30

MALE: Total length, 4.00–6.00 mm.

Carapace dark brown, darker in ocular area. A large, pale, butterfly-shaped spot present in middle of thoracic region which may be overlain with white scales. In unrubbed specimens a patch of white scales may be present in front of and behind the posterior eyes and between anterior eyes. Carapace margined with a thin black band. White hairs on clypeus. Chelicerae brown; endites and labium brown, paler at tips. Sternum pale yellow. Palps brown, with a pair of dorsolateral black bars on the three distal segments. Legs yellow. Abdomen with a pair of broad dark bands running from anterior to posterior end of dorsum and separated by a thin, narrow, pale, median band overlain with white



FIGS. 38–40. *Marpissa lineata* (C. L. Koch). 38. Epigynum. 39. Female genitalia, dorsal view. 40. Expanded palpus, lateral view.

FIGS. 41–43. *Marpissa sulcosa,* new species. 41. Epigynum. 42. Dorsal abdominal pattern of male. 43. Palpal tibia of male, lateral view.

FIG. 44. *Marpissa obtusa,* new species. Palpal tibia of male, lateral view.

FIG. 45. *Marpissa dentoides,* new species. Palpal tibia of male, lateral view.

FIG. 46. *Marpissa obtusa,* new species. Epigynum.

Abbreviations: E, embolus; S, subtegulum; T, tegulum.

scales. Sides of abdomen pale. In unrubbed specimens lateral bands may be covered with iridescent scales. Venter pale, with dark spot in front of spinnerets.

Structure essentially as in *M. grata.* Width of carapace 65 per cent of length and height approximately one-half of width (12:24). Carapace relatively flat, with posterior declivity occupying last quarter of length. First pair of legs much heavier than remaining legs.

Anterior eyes subcontiguous, with anterior medians twice the diam-

eter of anterior laterals. Eyes of median row one-third of the diameter of anterior laterals and located approximately midway between anterior laterals and posterior eyes. Posterior eyes subequal to anterior laterals in size. Third eye row slightly wider than first and ocular quadrangle occupying approximately 45 per cent of the carapace length.

Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: tibia, two unpaired and one pair of ventrals; metatarsus, two pairs.

Inner margin of tibial apophysis of male palp provided with a single small tooth.

Measurements of male holotype: Total length, 5.03 mm. Carapace: length, 2.18 mm.; width, 1.41 mm.; height, 0.81 mm. Patella and tibia: first leg, 1.95 mm.; second leg, 1.12 mm.; third leg, 1.12 mm.; fourth leg, 1.24 mm.

FEMALE: Total length, 4.40–5.18 mm.

Coloration as in *M. grata* except that dark spots on abdomen may be overlain with orange scales and venter pale with only a single black spot in front of spinnerets.

Structure, eye arrangement, and spination as in male. Epigynum as figured.

Measurements of female allotype: Total length, 5.24 mm. Carapace: length, 2.06 mm.; width, 1.27 mm.; height, 0.66 mm. Patella and tibia: first leg, 1.41 mm.; second leg, 0.90 mm.; third leg, 0.84 mm.; fourth leg, 1.12 mm.

COMPARISONS: This species is very close to *Marpissa grata* although widely separated geographically. It differs slightly in coloration, the presence of but a single spot on the venter rather than a band, and a single tooth on the tibial apophysis of the male palp.

TYPE LOCALITY: Male holotype and female allotype from Alachua County, Florida, November 25, 1952, collected by H. K. Wallace.

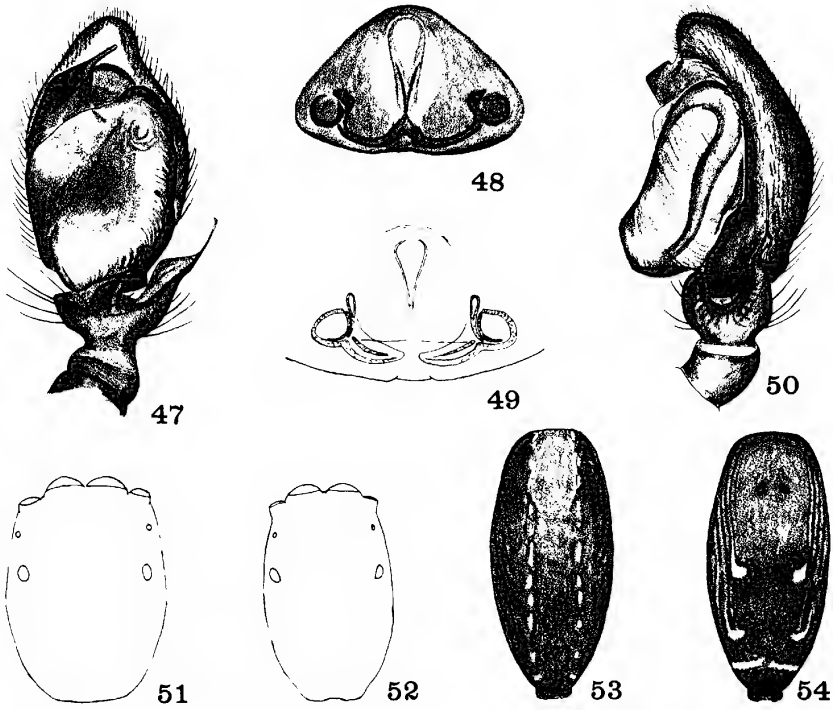
RECORDS: *Florida:* Fort Myers, January 30, 1942, female; Alachua County, December 12, 1948 (H. K. Wallace), female; November 14, 1952 (H. K. Wallace), male; November 25, 1952 (H. K. Wallace), 10 males, seven females, four immatures.

This species is named in honor of Dr. H. K. Wallace, Chairman of the Department of Zoology at the University of Florida.

Marpissa pikei (Peckham and Peckham)

Figures 16–21

Hyctia pikei PECKHAM AND PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 79, pl. 1, fig. 59, pl. 5, fig. 59, pl. 6, fig. 59a (male, female). PECKHAM AND



FIGS. 47–51. *Metacyrba taeniola* (Hentz). 47. Left palpus, ventral view. 48. Epigynum. 49. Female genitalia, dorsal view. 50. Left palpus, lateral view. 51. Dorsal view of carapace.

FIGS. 52–53. *Metacyrba floridana* Gertsch. 52. Dorsal view of carapace. 53. Dorsal abdominal pattern of female.

FIG. 54. *Metacyrba punctata* (Peckham and Peckham). Dorsal abdominal pattern of female.

PECKHAM, 1894, Occas. Papers Wisconsin Nat. Hist. Soc., vol. 2, p. 117. SIMON, 1901, Histoire naturelle des araignées, vol. 2, p. 602. EMERTON, 1902, Common spiders, p. 62, fig. 158. PECKHAM AND PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 488, pl. 39, figs. 7–7b, pl. 40, figs. 8–8b (male, female). EMERTON, 1909, Trans. Connecticut Acad. Sci., vol. 14, pl. 11, figs. 7–7c (male, female). PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 658. Comstock, 1940, The spider book, rev. ed., p. 677. CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, biol. ser., vol. 8, p. 202. KASTON, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 455, figs. 1640–1643, 1657 (male, female). LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, no. 2, p. 462.

MALE: Total length, 4.50–8.50 mm.

Carapace dark to light brown, with sooty maculations and in unrubbed specimens may be covered with thin, scattered, white scales.

Margin with a black band. Eyes surrounded with black. Thin tufts of black hairs between first and second row of eyes. Clypeus with long white hairs which extend up between eyes of anterior row. Chelicerae brown. Labium and endites brown, with pale tips. Sternum pale. First leg brown, with distal end of segments darker. Remaining legs pale. Dorsum of abdomen chalky white, with a wide, dark brown, median band extending over entire length. Sides of abdomen with scattered dark spots and bars. Venter pale, with a median sooty band. Anterior spinnerets pale, posterior dark brown.

Carapace flat, with posterior declivity confined to posterior one-fifth. Width of carapace 57 per cent of length, with widest point halfway between posterior eye row and posterior margin. Height slightly greater than one-half of the width (14:25). Furrow of chelicerae with two small teeth on anterior margin and a single tooth on the posterior margin. First pair of legs at least three times as heavy as remaining legs. Abdomen long, approximately twice the length of the carapace.

Anterior eyes subcontiguous, with anterior medians twice the diameter of the laterals. Eyes of second row one-third of the diameter of the anterior laterals and slightly closer to the posterior eyes than to the anterior laterals. Third eye row slightly wider than first and eyes equal to anterior laterals in diameter. Ocular area wider than long (21:18) and occupying 41 per cent of carapace.

Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: tibia, one pair of ventrals and two unpaired ventrals; metatarsus, two pairs of ventrals and a proximal unpaired ventral.

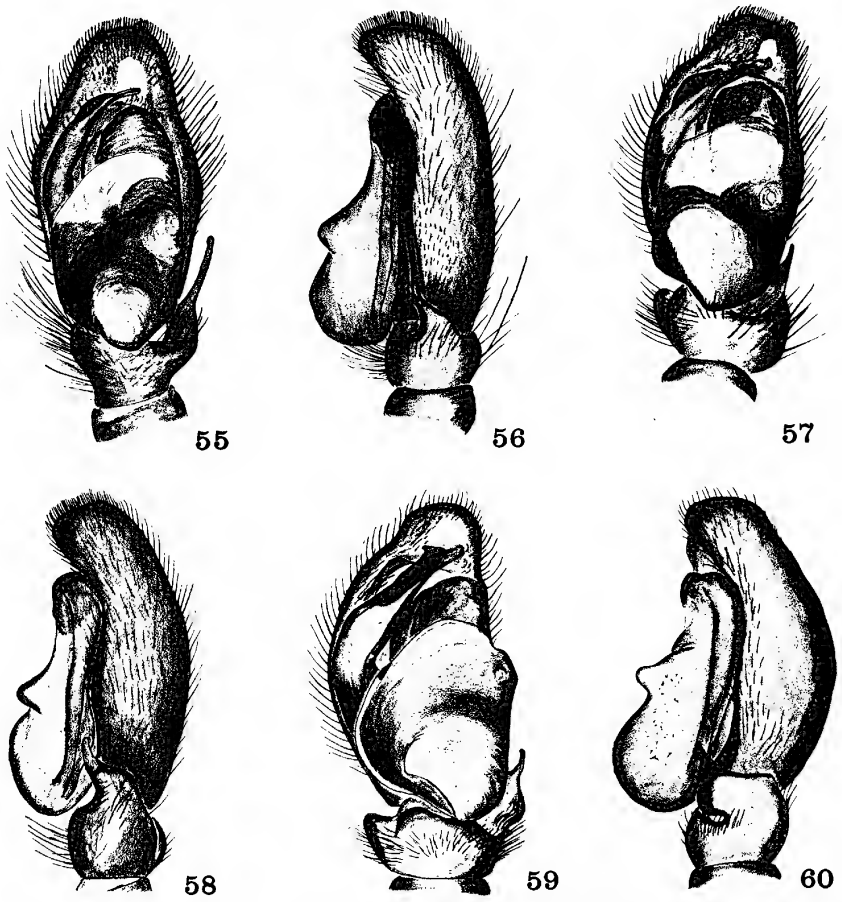
Structure of palp as figured.

Measurements of a male from Texas: Total length, 7.06 mm. Carapace: length, 2.58 mm.; width, 1.47 mm.; height, 0.84 mm. Abdomen: length, 4.70 mm.; width, 1.24 mm. Patella and tibia: first leg, 2.58 mm.; second leg, 1.18 mm.; third leg, 0.84 mm.; fourth leg, 1.47 mm.

FEMALE: Total length, 5.00–11.00 mm.

Coloration of carapace and appendages as in male. Dorsum of abdomen pale, with a median and two lateral narrow broken black lines. Between these lines are scattered black spots. Extending from base of abdomen on each side is a dark line which breaks up into bars on sides of abdomen. In some specimens this pattern may be obscure, with dorsum covered with scattered flecks of black. Venter pale, with two median and a pair of lateral black spots in front of spinnerets.

Structure of carapace, eye arrangement, and spination as in male. Epigynum with a chitinous rim forming a common chamber before entrance to openings.



FIGS. 55–56. *Metacyrba undata* (De Geer). 55. Left palpus, ventral view. 56. Left palpus, lateral view.

FIGS. 57–58. *Metacyrba californica* (Peckham and Peckham). 57. Left palpus, ventral view. 58. Left palpus, lateral view.

FIGS. 59–60. *Metacyrba arizonensis,* new species. 59. Left palpus, ventral view. 60. Left palpus, lateral view.

Measurements of a female from Texas: Total length, 9.38 mm. Carapace: length, 2.94 mm.; width, 1.64 mm.; height, 0.78 mm. Abdomen: length, 6.72 mm.; width, 1.76 mm. Patella and tibia: first leg, 2.64 mm.; second leg, 1.37 mm.; third leg, 1.70 mm.; fourth leg, 1.76 mm.

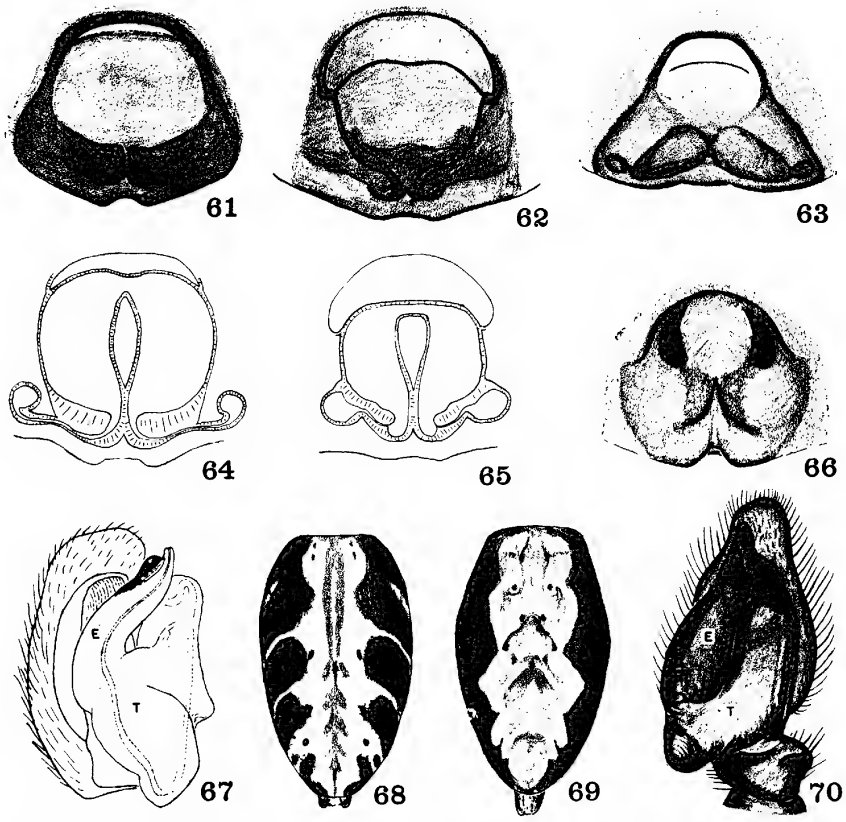
COMPARISONS: *Marpissa pikei* is easily separated from the other eastern members of this genus by the very long abdomen, extremely flat carapace, and the chitinous rim over the epigynal openings in the female. It is closely related to the western *M. robusta*. However, the tibial

apophysis of the male palp in *pikei* is shorter than in *robusta,* and the female of *robusta* lacks the distinctive chitinous rim on the epigynum.

TYPE LOCALITY: Peckham's original description was based on specimens from "New York, South Carolina, Georgia and Florida."

DISTRIBUTION AND ECOLOGY: *Marpissa pikei* is widely distributed over the entire eastern half of the United States. It is a common member of herbaceous, particularly grass, and shrub communities. The author has reported it from maritime grass and herbaceous communities on the North Carolina coast (Barnes, 1953) and from broom-sedge communities in the southeastern piedmont (Barnes and Barnes, 1955). Lowrie lists it as a member of the dune communities in Illinois (Lowrie, 1942). This species apparently tolerates more xeric conditions than other members of the genus. In the temperate regions of the United States mature specimens have been reported from late spring through fall and during the winter months in Florida.

RECORDS: *Connecticut:* Norwalk, June 25, 1933 (W. Gertsch), female. *New York:* Staten Island, October 17, 1911 (Gronbeck), male; Cold Spring Harbor, Long Island, June 20, 1932 (W. J. Gertsch); Greenport, Long Island, July 30, 1946 (R. Latham), male; Southold, Long Island, June 11, 1950 (R. Latham), female. *New Jersey:* Sandy Hook, two males, female; Ramsey, June, 1935 (W. J. Gertsch), male; Great Swamp, Chatham, April 22, 1944 (J. L. Cooper and W. F. Rapp, Jr.), male. *Virginia:* East Falls Church, July 16, 1922, three females. *North Carolina:* Chapel Hill, October 26, 1883, female; North River, Carteret County, June 8, 1951 (R. D. Barnes), male. *Georgia:* Near Waycross, April 21, 1938 (W. J. Gertsch), two males. *Florida:* Tampa, July 7, 1927 (Stone), male; Lake Jackson, Leon County, October 21, 1933 (H. K. Wallace), male; Gainesville, October 12, 1936 (W. A. Murrill), male; north of Homestead, Everglades, July 21, 1942, male; Alachua County, December 12, 1948, male; Jackson County, April 4, 1953 (H. K. Wallace), three females; Leesburg, March 1–11, 1954 (M. Statham), female. *Alabama:* Gulf State Park, August 23–25, 1940 (A. F. Archer), female; Prairieville, October 4, 1940 (A. F. Archer). *Mississippi:* Eight miles east of Morton, August 16, 1940 (I. Davis). *Texas:* Edinburg, October 28, 1934 (S. Mulaik), male; Port Bolivar, June 5, 1936 (S. Mulaik), male; Edinburg, December 1, 1936 (S. Mulaik), two males; 1 mile north of Fort Davis, Davis Mountains, July 16, 1941 (B. E. White), male; LaRue, May 17, 1942 (O. Sanders), male; Dallas, August 31, 1942 (B. Malkin), four males, three females; Dallas, May 4, 1943 (O. Sanders), female; Harlingen, July 6, 1945 (D. E. Hardy), female; Thorndale, October 2, 1950 (W. J. Gertsch), male. *Kansas:* Medora, June 29, 1936



FIGS. 61, 64, 68. *Metacyrba californica* (Peckham and Peckham). 61. Epigynum. 64. Female genitalia, dorsal view. 68. Dorsal abdominal pattern of male.

FIGS. 62, 65, 67, 69. *Metacyrba undata* (De Geer). 62. Epigynum. 65. Female genitalia, dorsal view. 67. Expanded palpus, ventrolateral view. 69. Dorsal abdominal pattern of male.

FIG. 63. *Metacyrba arizonensis,* new species. Epigynum.

FIG. 66. *Menemerus vittatus* (Banks). Epigynum.

FIG. 70. *Menemerus semilimbatus* (Hahn). Left palpus, ventral view.

Abbreviations: E, embolus; T, tegulum.

(P. W. Oman), male; Garnet, July 1, 1936 (P. W. Oman), male; Ottawa County State Park, August 20, 1947 (C. J. Goodnight), female. *Michigan:* E. S. George Reserve, Livingston County, July 22, 1950 (H. K. Wallace), five males, female. *Wisconsin:* Walworth County, July 3, 1938 (D. C. Lowrie), female. *New Mexico:* San Miguel County, female. *Arizona:* Eighteen miles east of Nogales, June 23, 1939 (L. I. Davis), female. *Cuba:* Cabanas, September 5–8, 1913, two males; south of Pinar

del Rio, September 12–23, male, two females; Guana, September 24–26, 1913, female.

Marpissa robusta (Banks)

Figures 31–34

Hyctia robusta Banks, 1905, Proc. Ent. Soc. Washington, vol. 7, p. 99, pl. 2, fig. 5 (female). Peckham and Peckham, 1909, Trans. Wisconsin Acad. Sci., vol. 14, p. 489, pl. 39, fig. 6.

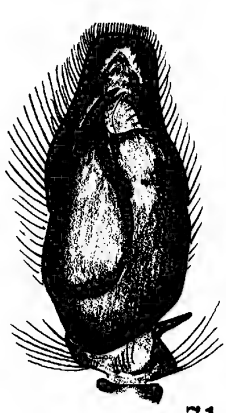
Male: Total length, 6.00–8.00 mm.

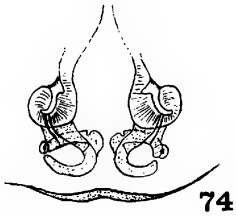
Carapace dark brown and margined with a thin black line. Eyes surrounded by dark. A pair of white scale patches in ocular area at level of median eyes. These extend laterally to surround median eyes, then anteriorly to anterior lateral eyes and posteriorly beneath posterior eyes. The posterior extension swings around posterior eyes towards midline of thorax where it broadens and joins band of scales from opposite side of carapace. Thin, scattered, long, black hairs between anterior lateral and posterior eyes. Clypeus with long gray-black hairs. Chelicerae brown; labium and endites brown, with pale tips. Sternum, palps, and first legs brown. Other legs straw yellow. Prolateral side of first tibia and metatarsus with long white hairs. Abdomen pale, with broad, dark brown, median band covering entire width of dorsum. Venter pale. Dorsal side of posterior spinnerets dark, anterior spinnerets pale.

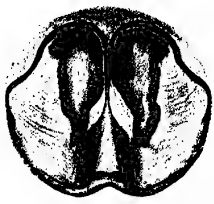
Carapace flat, with posterior declivity in posterior quarter of carapace. Sides of carapace rounded, with widest point midway between posterior eyes and posterior margin. Width of carapace approximately two-thirds of carapace length (37:58). Height of carapace slightly less than one-third of width (11:37). Anterior margin of fang furrow with two teeth, posterior margin with one tooth. First pair of legs three times as heavy as remaining legs. Abdomen length a little less than twice the length of the carapace.

Eyes of anterior row subcontiguous, with medians twice the diameter of the anterior laterals. Median eyes one-fourth of the diameter of the anterior laterals and located approximately midway between anterior laterals in size. Third row of eyes slightly wider than first (27:26). Ocular area wider than long (27:23) and occupying approximately 40 per cent of carapace length.

Ventral spines of first leg: tibia, two pairs of ventrals and one unpaired ventral; metatarsus, two pairs. Second leg: tibia, one pair of ventrals and two unpaired ventrals; metatarsus, two pairs.







FIGS. 71–74. *Menemerus bivittatus* (Dufour). 71. Left palpus, ventral view. 72. Left palpus, lateral view. 73. Epigynum. 74. Female genitalia, dorsal view (only ventral half of epigynum shown).

FIG. 75. *Menemerus semilimbatus* (Hahn). Epigynum.

Palp with a long tibial apophysis.

Measurements of a male from California: Total length, 8.52 mm. Carapace: length, 3.38 mm.; width, 2.18 mm.; height, 0.66 mm. Abdomen: length, 5.12 mm.; width, 1.37 mm. Patella and tibia: first leg, 3.50 mm.; second leg, 1.89 mm.; third leg, 1.47 mm.; fourth leg, 2.12 mm.

FEMALE: Color of carapace as in male. White scales may be scattered rather than in distinct patches. Appendages as in male except that palps are yellow, with a pair of dark dorsolateral longitudinal stripes on patella, tibia, and tarsus and covered with long white hairs. Ventral and prolateral sides of anterior legs with many long white hairs. Abdominal pattern as in female of *M. formosa.*

Structure and eye arrangement as in male. Tibia and metatarsus of first leg with four and two pairs of ventral spines, respectively. Second

tibia with two pairs of ventrals and one unpaired ventral. Second metatarsus with two pairs of ventrals.

Epigynum as figured.

Measurements of female from California: Total length, 8.56 mm. Carapace: length, 3.38 mm.; width, 2.18 mm.; height, 1.00 mm. Abdomen: length, 5.30 mm.; width, 2.06 mm. Patella and tibia: first leg, 2.88 mm.; second leg, 1.76 mm.; third leg, 1.30 mm.; fourth leg, 2.36 mm.

COMPARISONS: This species is similar to *Marpissa bina* in coloration but close to *M. pikei* in structure. *Marpissa robusta* is a larger species than the latter and has a much longer tibial apophysis. The female of *M. robusta* has only a slight indication of the rim which is so prominent on the epigynum of *M. pikei*. While the abdomen of *robusta* is long, it does not reach the extent of that in *pikei*.

TYPE LOCALITY: Banks's original description was based on a male from "Arizona."

RECORDS: *Arizona:* Carr Canyon, Huachuca Mountains, June 3, 1952 (W. J. Gertsch, M. Cazier, R. Schrammel), male; Montezuma Pass, Huachuca Mountains, June 4, 1952 (W. J. Gertsch, M. Cazier, R. Schrammel), male. *California:* Lower part of Monrovia Canyon, July 26, 1931 (W. Ivie), male, female.

Marpissa lineata (C. L. Koch)

Figures 35–40

Maevia lineata C. L. KOCH, 1848, Die Arachniden, vol. 14, p. 77, pl. 479, fig. 1332 (female).

Attus quadrilineatus PECKHAM AND PECKHAM, 1883, Descriptions of new or little known spiders of the family Attidae, p. 19, pl. 2, fig. 15.

Icius lineatus, PECKHAM AND PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 45. BANKS, 1895, Jour. New York Ent. Soc., vol. 3, no. 2, p. 92.

Menemerus lineatus, EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 239, pl. 19, figs. 5–5b (female).

Fuentes lineatus, SIMON, 1903, Histoire naturelle des araignées, vol. 2, pp. 848–850. BANKS, 1904, Proc. Acad. Nat. Sci. Philadelphia, p. 139.

Onondaga lineata, PECKHAM AND PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 492, pl. 39, figs. 9–9e (male, female). COMSTOCK, 1940, The spider book, rev. ed., p. 704, fig. 764. KASTON, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 494, figs. 1850, 1854–1857 (male, female). LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, no. 2, p. 464.

MALE: Total length, 3.00–4.00 mm.

Carapace brown and margined with a thin black band. Eyes surrounded with black. Chelicerae brown; labium and endites brown,

with pale tips. Sternum and coxae yellow. Legs yellow, with first femur and tibia dark. Remaining legs with femur with a ventral proximal black spot and a distal dark band; tibia dark distally and proximally; metatarsus dark distally. Dorsum of abdomen with a median dark band which is narrow at anterior end and becomes broader posteriorly. In some specimens this band may be bifurcated in posterior half of dorsum, forming an elongated inverted Y. Median band flanked on each side by a narrow pale strip. Remainder of dorsum and sides of abdomen covered by narrow, closely placed, dark bands. Venter dark, with a pair of pale median and a pair of pale lateral bands.

Carapace gently sloping to and behind posterior eyes, with the posterior declivity in the last quarter of the carapace. Width of carapace three-quarters of length, and height approximately three-fifths of width. First legs twice as heavy as remaining legs. Abdomen only a little longer than carapace. Posterior margin of fang furrow with a double tooth.

Eyes of anterior row subcontiguous, with anterior medians almost twice the diameter of the anterior laterals. Median eyes slightly closer to posterior eyes than to anterior laterals and one-fourth of the diameter of the anterior laterals in size. Posterior eye row longer than anterior row (30:28) and subequal to anterior laterals in size. Ocular area wider than long (23:19) and occupying approximately 50 per cent of carapace length.

Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: tibia and metatarsus each with three unpaired ventrals.

Tibial apophysis of palp with a very shallow notch.

Measurements of a male from New York: Total length, 3.28 mm. Carapace: length, 1.44 mm.; width, 1.04 mm.; height, 0.64 mm. Abdomen: length, 1.92 mm.; width, 0.96 mm. Patella and tibia: first leg, 1.20 mm.; second leg, 0.76 mm.; third leg, 0.72 mm.; fourth leg, 1.12 mm.

FEMALE: Total length, 3.50–5.20 mm.

Coloration as in male, although first legs may be solid brown and remainder pale with no dark bands. Structure and eye arrangements as in male.

Openings and adjacent tubules of the epigynum in the form of two curved horns, with curved portions converging towards each other and openings directed laterally.

Measurements of a female from New York: Total length, 3.68 mm. Carapace: length, 1.80 mm.; width, 1.28 mm.; height, 0.60 mm. Abdo-

men: length, 1.88 mm.; width, 1.04 mm. Patella and tibia: first leg, 1.08 mm.; second leg, 0.84 mm.; third leg, 0.84 mm.; fourth leg, 1.16 mm.

COMPARISONS: This species is distinctive in having a broad tibial apophysis, with a shallow notch in the male palp, while the epigynum of the female has the openings directed outwardly, with the adjacent tubules converging.

TYPE LOCALITY: The original description of Koch was based on a female from "Pennsylvania."

ECOLOGY AND DISTRIBUTION: This little spider is common in leaf mold in forest and shrub communities. Muma reports it as being a common member of the litter population of the prairie grass communities. *Marpissa lineata* is widely distributed over the eastern half of the United States but is apparently displaced by *M. sulcosa* in Florida and along the southern coast.

RECORDS: *Massachusetts:* Woods Hole, female. *New York:* Berkley Heights, May 5, 1910, two females; Flushing, Long Island, May, 1937, male, female. *New Jersey:* Ramsey, July, 1939 (W. J. Gertsch), male, immature; July, 1944 (W. J. Gertsch), female; Lambertville, June, 1952, female, immature. *Georgia:* Folkston, February 18, 1936, female. *Mississippi:* Biloxi, September 3, 1941 (C. and M. Goodnight), female. *Tennessee:* Benton County, July 23, 1952 (T. J. Walker, Jr.), female. *Missouri:* St. Louis, May 13, 1950 (W. Doudy), female. *Illinois:* Old Riply, August 11, 1941 (C. and M. Goodnight), female. *Michigan:* Livingston County, E. S. George Reserve, June 12, 1954 (H. K. Wallace), male, August 2, 1954 (H. K. Wallace), two females, August 15, 1954 (H. K. Wallace), female.

Marpissa sulcosa, new species

Figures 41–43

MALE: Total length, 3.50–4.50 mm.

Carapace brown, darker around eyes and margined with a thin black line. Center of ocular area and central part of posterior declivity pale. A narrow, faint, median, dark line from anterior part of ocular area to posterior edge of carapace. Anterior eyes surrounded with golden hairs. Clypeus with gray hairs which extend back along lateral sides of carapace. Chelicerae brown; labium and endites brown, pale at tips. Sternum, coxae, and legs straw yellow, with first tibia dark brown, second and third tibia dark proximally and distally; second and third metatarsus dark distally. Dorsum of abdomen pale yellow, with a basal band and four pairs of brown blotches. First pair of blotches located

just above basal band, second pair one-quarter of distance back, third pair in middle and fourth pair three-quarters of distance from anterior end. A short, median, anterior line and a number of small, paired, black dots located between blotches. Sides of abdomen with scattered dark bars. Venter pale and margined with a thin black line on each side.

Structure of carapace and legs as in *M. lineata.*

Eyes of anterior row subcontiguous, with medians not quite twice the diameter of the anterior laterals. Median eyes two-fifths of the diameter of the anterior laterals and located slightly closer to the posterior eyes than to the anterior laterals. Posterior eye row slightly wider than first (28:27) and eyes equal to the anterior laterals in size. Ocular area wider than long (28:21) and occupying approximately 50 per cent of carapace length.

Ventral spines as in *M. lineata* except that second tibia has two unpaired ventrals and a pair of distal ventrals.

Tibial apophysis of palp with two unequal rounded points separated by a shallow notch. Ventral point much higher and larger than posterior point.

Measurements of male holotype: Total length, 4.08 mm. Carapace: length, 2.16 mm.; width, 1.20 mm.; height, 0.76 mm. Abdomen: length, 2.00 mm.; width, 1.04 mm. Patella and tibia: first leg, 1.40 mm.; second leg, 0.88 mm.; third leg, 0.72 mm.; fourth leg, 1.12 mm.

FEMALE: Coloration of carapace and abdomen as in *M. lineata* except that venter is pale and margined with a pair of lateral black lines. First leg brown and remainder pale. First and second femora with a distal ventral cross band. Third and fourth femora with a proximal and distal cross band. Third and fourth tibiae dark proximally and third and fourth metatarsi dark distally.

Structure and eye arrangement as in male. Epigynum with small openings directed downward.

Measurements of female allotype from Florida: Total length, 4.00 mm. Carapace: length, 1.68 mm.; width, 1.12 mm.; height, 0.60 mm. Abdomen: length, 2.32 mm.; width, 1.28 mm. Patella and tibia: first leg, 1.12 mm.; second leg, 0.80 mm.; third leg, 0.72 mm.; fourth leg, 0.96 mm.

COMPARISONS: This species belongs to the *lineata* complex of *Marpissa* but shows a marked difference in coloration. The dorsum of the male displays a distinctive pattern of paired spots, while in both sexes the venter lacks the median paired bands. The points of the tibial apophysis in the male are more unequal than in *lineata,* and in the

female the tubules adjacent to the openings diverge rather than converge as in *lineata*. The openings are also smaller and directed downward.

TYPE LOCALITY: Male holotype collected April 8, 1929, by H. K. Wallace in Alachua County, Florida. Female allotype collected April 16, 1949, by H. K. Wallace in Duval County, Florida. This species is apparently restricted to Florida and the coastal region of the southern Atlantic states.

RECORDS: *North Carolina:* Beaufort, July 19, 1951 (R. D. Barnes), female. *South Carolina:* McClellansville, July–August, 1954 (P. Vaurie), male. *Florida:* Putnam County, June 2, 1947 (H. K. Wallace), male; Fort Myers, March 18, 1954 (Wilton Ivie), female.

Marpissa dentoides, new species

Figure 45

MALE: Total length, 3:28–3.80 mm.

Coloration, structure, and eye arrangement as in *M. lineata*. Cymbium of palp very much flattened and tibial apophysis with a single large curved projection.

Measurements of male holotype from New York: Total length, 3.92 mm. Carapace: length, 1.76 mm.; width, 1.28 mm.; height, 0.64 mm. Abdomen: length, 2.32 mm.; width, 1.16 mm. Patella and tibia: first leg, 1.60 mm.; second leg, 0.96 mm.; third leg, 0.84 mm.; fourth leg, 1.12 mm.

FEMALE: Total length, 4.00–5.80 mm.

Coloration, structure, and eye arrangement as in *M. lineata*. Epigynum essentially the same as that of *M. sulcosa*.

Measurements of female allotype from New York: Total length, 5.40 mm. Carapace: length, 1.92 mm.; width, 1.42 mm.; height, 0.68 mm. Abdomen: length, 3.48 mm.; width, 1.84 mm. Patella and tibia: first leg, 1.24 mm.; second leg, 0.88 mm.; third leg, 0.80 mm.; fourth leg, 1.20 mm.

COMPARISONS: This species is very close to *M. lineata* in coloration and structure. The male, however, can easily be separated from other members of the *lineata* group in having the cymbium of the palp flattened and the tibial apophysis in the form of a single curved projection. The epigynum of the female is identical to that of *M. sulcosa,* and females can be separated from those of that species only by smaller size and geographical location.

TYPE LOCALITY AND DISTRIBUTION: Male holotype and female allotype from Sea Cliff, New York, collected June 13, 1919. This species

is apparently confined to the coastal region of the northeastern states and ranges inland in the middle Atlantic states. It occurs together with *M. lineata.*

RECORDS: *Massachusetts:* Woods Hole, July 6, 1901, two males; Falmouth, July 21, 1925 (Phillips), female. *New York:* Long Island, Cold Spring Harbor, June 20, 1932, five females; June 24, 1932 (W. J. Gertsch), female. *North Carolina:* Burlington, June 8, 1933 (H. K. Wallace), male; 3.7 miles northwest of Thompsonville, June 20, 1953 (R. D. Barnes), male. *Tennessee:* Benton County, July 23, 1952 (T. J. Walker), female.

Marpissa obtusa, new species

Figures 44, 46

MALE: Carapace pale brown margined with a thin black band. Ocular area darker brown, continuing posteriorly as a band on each side. A pair of pale, closely placed spots in posterior part of ocular area and eyes surrounded by black. A median brown spot in center of posterior declivity and extending to posterior margin as a short bar. Chelicerae brown; labium and endites brown, with pale tips. Sternum and coxae pale. First femur brown dorsally, with a prolateral light band. First patella brown proximally and pale distally. First tibia brown and first metatarsus and tarsus pale. All other femora pale, with two ventral bars and a prolateral black transverse bar. Patellae pale, with a dorsal median and distal black spot. Second tibia pale, with a black dorsal and proximal ring. Remaining tibiae the same but also dark distally. Remaining metatarsi pale but third and fourth with a black distal ring. Remaining tarsi pale. Dorsum of abdomen pale, with five pairs of lateral black spots, the three middle pairs being the largest and most conspicuous. Middle of dorsum with a short black median anterior bar and a small black spot in middle of quadrangle formed by second and third pairs of lateral spots. These are followed by a series of small paired black spots extending to the posterior. Sides of abdomen with numerous closely placed, short, black bars. Venter pale, with a pair of narrow lateral black bands and two pairs of small black spots in front of spinnerets and a second pair in front of these. Spinnerets pale except for posterior pair which are black dorsally.

Structure of carapace and legs as in *M. lineata.* Anterior eyes subcontiguous, with anterior medians twice the diameter of the anterior laterals. Median eyes one-third of the diameter of the anterior laterals and located slightly closer to the posterior eyes than to the anterior laterals. Posterior eye row wider than first (29:25) and eyes equal to

the anterior laterals in size. Ocular area wider than long (29:22) and occupying 50 per cent of carapace.

Ventral spines of first leg: tibia, four pairs; metatarsus, two pairs. Second leg: tibia, two unpaired and one pair of ventrals; metatarsus as in first leg.

Tibial apophysis of palp broad and truncate.

Measurements of male holotype from Texas: Total length, 3.34 mm. Carapace: length, 1.76 mm.; width, 1.28 mm.; height, 0.72 mm. Abdomen: length, 2.08 mm.; width, 1.08 mm. Patella and tibia: first leg, 1.36 mm.; second leg, 0.96 mm.; third leg, 0.80 mm.; fourth leg, 1.20 mm.

FEMALE: Total length, 4.00–5.00 mm.

Coloration and structure essentially as in *M. lineata.* Anterior eyes subcontiguous, with anterior medians a little less than twice the diameter of the anterior laterals. Eyes of second row midway between anterior laterals and posterior eyes and one-third of the diameter of the anterior laterals in size. Posterior eye row wider than first (34:33) and eyes equal to the anterior laterals in size. Ocular area wider than long (33:24) and occupying approximately 50 per cent of carapace length.

Epigynum as figured.

Measurements of female allotype from Texas: Total length, 4.33 mm. Carapace: length, 1.80 mm.; width, 1.19 mm.; height, 0.64 mm. Abdomen: length, 2.66 mm.; width, 1.36 mm. Patella and tibia: first leg, 1.06 mm.; second leg, 0.85 mm.; third leg, 0.78 mm.; fourth leg, 1.09 mm.

COMPARISONS: This species is most distinctive in the male, in which the tibial apophysis is broad and truncate. In the female the epigynum is similar to that of *M. dentoides* and *sulcosa,* although it is a larger species than the latter, and the openings are a little larger and closer together than in the other two species. The male abdominal pattern is similar only to that of the male of *sulcosa.*

TYPE LOCALITY: Male holotype collected June 4, 1936, by S. Mulaik at Palacios, Texas. Female allotype and one female paratype collected September 28, 1950, by W. J. Gertsch in the Basin, Chisos Mountains, Big Bend National Park, Texas.

RECORDS: *Texas:* Ilano, December 26, 1937 (L. I. Davis), female; Kerrville, September 9–30, 1955 (L. J. Bottimer), female.

METACYRBA F. O. P.-CAMBRIDGE

Metacyrba F. O. P.-CAMBRIDGE, 1901, Biologia Centrali-Americana, Araneidea, vol. 2, p. 252. Genotype: *Attus taeniola* Hentz.

Small to medium-sized jumping spiders (4.00–11.00 mm., total length) with relatively flat carapaces. Width of carapace varying between 60 per cent and 80 per cent of length. Height a little less than to a little greater than one-half of the width. Sternum narrower than base of labium.

Eyes of anterior row subcontiguous, with median eyes twice the diameter or slightly less than twice the diameter of the anterior laterals. Position of median eyes between anterior laterals and posterior eyes variable. Posterior eye row wider than, equal to, or narrower than anterior eye row. Ocular area wider than long and occupying from 40 per cent to 55 per cent of carapace length.

First pair of legs at least twice as heavy as remaining legs. Order of leg length: 4:1:3:2 or 1:4:2:3. Ventral spines of first leg: tibia, two or three pairs; metatarsus, two pairs.

Embolus (E in fig. 67) of male palp large, heavy, and tapered distally and with a broad attachment to the tegulum (T) proximally. The base of the embolus is hidden by the tegulum when unexpanded. Tegulum large, sac-like, and protruding from alveolus. Tibia with a single apophysis which extends distally as a narrow projection of varying length.

Epigynum with a single opening into a common atrium from which extend short tubular passages laterally to a bursa on each side (figs. 49, 64, 65).

Members of this genus are found on foliage, bark, and stones. They hibernate during the winter in silken sacs beneath bark, wood, and similar objects.

This genus is restricted to the Western Hemisphere and included among its members are those American species formerly placed in *Marpissa*. It is possible that *M. taeniola, floridana,* and *punctata* represent a subspecific complex rather than separate species. This question, however, cannot be resolved until more specimens of *M. floridana* and *punctata* are available for study.

Metacyrba taeniola (Hentz)

Figures 47–51

Attus taeniolus Hentz, 1845, Jour. Boston Soc. Nat. Hist., vol. 5, p. 353, pl. 21, fig. 5 (female); 1875, Occas. Papers Boston Soc. Nat. Hist., vol. 2, p. 56, pl. 8, fig. 5 (female).

Cyrba taeniola, Peckham and Peckham, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 75, pl. 1, fig. 56, pl. 4, fig. 56, pl. 5, fig. 56. Emerton, 1902, Common spiders, p. 65, figs. 159–160.

Metacyrba taeniola, F. O. P.-Cambridge, 1901, Biologia Centrali-Americana,

Araneidea, vol. 2, p. 251, pl. 22, figs. 9–10. PECKHAM AND PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 486, pl. 39, fig. 5, pl. 40, fig. 4. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 673. CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, biol. ser., vol. 8, p. 203. LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, no. 2, p. 462, figs. 96, 98.

Metacyrba similis BANKS, 1904, Proc. California Acad. Sci., vol. 3, p. 360, pl. 38, fig. 9.

MALE: Total length, 4.40–6.00 mm.

Carapace dark brown to black, with a thin marginal white band. Clypeus thin to thickly clothed with white hairs. Chelicerae dark brown and may be clothed with white hairs and scales. Labium and endites dark brown, with pale tips. Sternum and coxae brown. First leg dark brown, with tarsus light. Remaining legs with femora darker than other segments. All femora with a pair of longitudinal light stripes on dorsal surface. This tends to be obscured in the first legs. Scattered white scales may frequently be present on all legs. Dorsum and sides of abdomen blackish, with a brown scutum in anterior half of dorsum. A pattern of white lines or spots is usually present on dorsum. This may vary from a pair of white lines beginning on each side of scutum and running to posterior end of abdomen to a pair of four small white spots or longitudinal bars on posterior half of dorsum. This latter condition may be reduced to two spots or obscured altogether. Venter pale brown.

Carapace relatively flat, with posterior declivity in last one-fifth. Sides somewhat rounded, with widest point just behind posterior eye row. Width of carapace approximately 70 per cent of length and height approximately 53 per cent of width. First pair of legs twice as large as remaining legs.

Anterior eyes subcontiguous, with anterior medians slightly less than twice the diameter of the anterior laterals. Median eyes one-third of the diameter of the anterior laterals and located midway between anterior laterals and posterior eyes. Posterior eye row slightly wider than anterior row (37:36) and eyes subequal to anterior laterals in size. Ocular area wider than long (36:30) and occupying 48 per cent of carapace length.

Ventral spines of first pair of legs: tibia, two pairs; metatarsus, two pairs. Second leg: tibia, one unpaired and one distal pair; metatarsus two pairs.

Tibial apophysis of palp with a deep notch. The dorsal side of notch with a long, thin projection extending to almost half of the length of the cymbium. This species has been described as having two apophyseal

projections. The "inner" is actually a highly sclerotized ridge on the side of the cymbium.

Measurements of a male from Florida: Total length, 5.20 mm. Carapace: length, 2.48 mm.; width, 1.72 mm.; height, 0.92 mm. Abdomen: length, 2.72 mm.; width, 1.32 mm. Patella and tibia: first leg, 1.60 mm.; second leg, 1.20 mm.; third leg, 1.04 mm.; fourth leg, 1.60 mm.

FEMALE: Total length, 5.00–7.20 mm.

Coloration as in male but scutum lacking. Structure, eye arrangement, and spination as in male. Epigynum as figured.

Measurements of female from Florida: Total length, 6.08 mm. Carapace: length, 2.80 mm.; width, 1.80 mm.; height, 1.04 mm. Abdomen: length, 3.28 mm.; width, 1.72 mm. Patella and tibia: first leg, 1.60 mm.; second leg, 1.32 mm.; third leg, 1.16 mm.; fourth leg, 1.72 mm.

COMPARISONS: This species differs from *M. floridana* and *punctata* in having a much broader carapace, the width being approximately 70 per cent of the length. *Metacyrba taeniola* also reaches the greatest length of the three species.

TYPE LOCALITY AND DISTRIBUTION: Hentz's description was based on specimens from "North Carolina and Alabama." This is a relatively common species and ranges over the entire southern half of the United States. The only northern record is from Wisconsin (Levi and Field, 1954).

RECORDS: *Delaware:* Wilmington, May 30, 1941 (A. L. Bacon), male. *Maryland:* Kensington, July 5, 1945 (J. M. Davis), male. *North Carolina:* Monroe, June, 1942 (Mrs. Alice C. Bell), male, two females. *Florida:* Alachua County, October 5, 1948 (H. K. Wallace), female; Duval County, April 4, 1949, female; Hillsborough County, April 14, 1949, two males, female; Jackson County, April 3, 1953 (H. K. Wallace), two males. *Mississippi:* Centreville, Wilkinson County, January–July, 1944 (A. F. Archer), female. *Tennessee:* Stow's River south of Shelbyville, July, 1943 (A. F. Archer), female. *Texas:* San Solomon Spring, Taylorsville, July 6, 1934, male; 30 miles west of Edinburg, November 24, 1934 (S. Mulaik), female; Cameron County, December 1, 1934 (L. I. Davis), female; Edinburg, October 15, 1935 (Schulle), male; 32 miles southeast of Laredo, April 10, 1936 (Haymes), male; Austin, August, 1936 (L. I. Davis), female; Somerset, March 17, 1937 (A. J. Kirn), female; north of McCook, November 28, 1937 (S. Mulaik), female; Uvalde County, May 30, 1938 (Robinson), male; Bastrop, August 14, 1938 (L. I. Davis), female; 5 miles east of Rio Grande City,

January 21, 1939, female; McCook, January 29, 1939 (D. and S. Mulaik), female; Los Fresnos, May 30, 1939 (S. Mulaik), female; Raven Ranch, Kerr County, June, 1941 (R. Scott), two females; Del Rio, May 26, 1946 (C. D. Michener), female; The Basin, Chisos Mountains, Big Bend National Park, September 28, 1950 (W. J. Gertsch), female; 20 miles east of Sheffield, Crockett County, September 30, 1950 (W. J. Gertsch), female; McAllen, May 13, 1952 (W. J. Gertsch), male, female; Limpia Creek Canyon, Davis Mountains, September 8, 1952 (B. Malkin), female; 40 Mile Hill, 40 miles east of El Paso, September 10, 1952 (B. Malkin), female; Chisos Mountains, Big Bend National Park, December 14, 1954 (K. W. Haller), female. *New Mexico:* Six miles north of Penos Altos, Grant County, December 6, 1954 (K. W. Haller), female. *Arizona:* Tucson, March 15, 1940 (Bryant), female; Huachuca Mountains, September 20, 1940 (R. H. Crandall), female; Mesa, July 16, 1940 (W. J. Gertsch), two females; Garden Canyon, Huachuca Mountains, July 11, 1950 (W. S. Creighton), male; 3 miles west of Paradise, Chiricahua Mountains, September 9, 1950 (W. J. Gertsch), three females; Southwestern Research Station, 5 miles west of Portal, June 26, 1955 (M. Statham), male, five females. *California:* Los Angeles, June–August, 1931 (Sternitzky), female; Searsville, San Mateo County, September 2, 1931 (Sternitzky), eight females; Hastings Natural History Reserve, Monterey County, May 6, 1950, two males, two females. *Utah:* Richfield, May 25, 1930 (W. J. Gertsch), female; Fish Lake, Sevier County, June 22, 1930 (W. J. Gertsch), male. *Mexico:* San Pedro, May, 1936 (G. Rutherford), male.

Metacyrba floridana Gertsch

Figures 52–53

Metacyrba floridana Gertsch, 1934, Amer. Mus. Novitates, no. 726, p. 19 (female).

Male: Carapace deep, shining, mahogany brown margined with a thin band of white hairs. Ocular area may be margined with white scales. Chelicerae, sternum brown; labium and endites brown and pale at tip. Coxae brown. All legs straw-colored except first patella and tibia which are dark brown, with a pair of pale longitudinal stripes on dorsal surface of each. Dorsum and sides of abdomen brown, with a scutum in anterior half of dorsum. A pair of narrow broken lines beginning on either side of scutum and extending to posterior end of dorsum. Venter grayish brown, with four longitudinal lines formed by pale dots.

Carapace long and narrow, with sides evenly curved and widest

point just behind posterior eye row. Width approximately 60 per cent of length. Carapace relatively flat above, with posterior declivity in last one-fifth. First pair of legs approximately two and one-half times as heavy as remaining legs.

Eyes of anterior row subcontiguous, with anterior medians twice the diameter of the anterior laterals. Eyes of median row one-quarter of anterior laterals in size and located midway between anterior laterals and posterior eyes. Posterior eye row wider than first (31:30) and eyes equal to anterior laterals in size. Ocular area wider than long (31:26) and occupying 54 per cent of carapace length.

Ventral spines of first leg: tibia, two unpaired ventrals; metatarsus, two pairs. Second leg: tibia, none; metatarsus, two unpaired ventrals.

Palp similar to that of *M. taeniola.*

Measurements of a male from Florida: Total length, 4.52 mm. Carapace: length, 1.92 mm.; width, 1.16 mm.; height, 0.72 mm. Abdomen: length, 2.60 mm.; width, 1.00 mm. Patella and tibia: first leg, 1.60 mm.; second and third legs, missing; fourth leg, 0.92 mm.

FEMALE: Total length, 5.10–6.60 mm.

Coloration and structure as in male.

Eyes of anterior row subcontiguous, with medians twice the diameter of anterior laterals. Eyes of median row two-fifths of the diameter of the anterior laterals and located very slightly closer to the anterior laterals than to the posterior eyes. Posterior eye row slightly wider than anterior row (35:33) and eyes subequal to anterior laterals in size. Ocular area wider than long (35:28) and occupying 43 per cent of carapace length.

Epigynum similar to that of *Metacyrba taeniola.*

Measurements of a female from Florida: Total length, 6.00 mm. Carapace: length, 2.44 mm.; width, 1.46 mm.; height, 0.82 mm. Abdomen: length, 3.57 mm.; width, 1.56 mm. Patella and tibia: first leg, 1.46 mm.; second leg, missing; third leg, 0.82 mm.; fourth leg, 1.56 mm.

COMPARISONS: This species is very closely related to *M. taeniola,* the genitalia being very similar. It differs, however, in being smaller and having a much narrower carapace than the latter. The width of the carapace is 60 per cent of the length in *M. floridana,* while it is 70 per cent in *M. taeniola.*

TYPE LOCALITY AND DISTRIBUTION: Gertsch's original description is based on a female from Fort Myers, Florida. This species is known only from Florida and Mississippi.

RECORDS: *Florida:* Orange County, December 1934 (K. Boyer), fe-

male; Gainesville, July 3, 1938 (H. K. Wallace), male. *Mississippi:* Hattiesburg, July 10, 1942 (M. Michener), female.

Metacyrba punctata (Peckham and Peckham)

Figure 54

Balmaceda punctata PECKHAM AND PECKHAM, 1894, Occas. Papers Nat. Hist. Soc. Wisconsin, vol. 2, p. 102, pl. 8, figs. 8–8c (male, female). F. O. P.-Cambridge, 1901, Biologia Centralia-Americana, Araneidea, vol. 2, p. 297, p. 29, figs. 2–3. SIMON, 1903, Histoire naturelle des araignées, vol. 2, p. 848. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 605.

Breda punctata, CHICKERING, 1946, Bull. Mus. Comp. Zoöl. Harvard College, vol. 29, p. 44.

FEMALE: Coloration of carapace and legs as in *M. taeniola.* Dorsum of abdomen grayish brown with a large pair of white spots at beginning of posterior half. A second pair of white spots in middle of posterior half followed by a pair of transverse white spots. The latter do not meet medially but extend laterally down sides of abdomen. Venter gray brown and margined with a longitudinal white band.

Structure similar to that of *M. taeniola* but carapace narrower. Width of carapace 50–60 per cent of carapace length.

Eyes of anterior row subcontiguous, with anterior medians twice the diameter of the anterior laterals. Median eyes one-third of the diameter of the anterior laterals and located slightly closer to the anterior laterals than to the posterior eyes. Posterior eye row wider than anterior (43:39) and eyes equal to the anterior laterals in size. Ocular area wider than long (43:33) and occupying 45 per cent of carapace length.

Spination as in *M. floridana.*

Epigynum similar to that of *M. taeniola.*

Measurements of a female from Texas: Total length, 4.93 mm. Carapace: length, 2.48 mm.; width, 1.56 mm.; height, 0.76 mm. Abdomen: length, 2.44 mm.; width, 1.46 mm. Patella and tibia: first leg, 1.53 mm.; second leg, 1.19 mm.; third leg, 1.02 mm.; fourth leg, 1.59 mm.

MALE: Coloration and structure as in female. Anterior half of dorsum of abdomen slightly sclerotized. Palpal structure similar to that of *M. taeniola.* Dr. Herbert Levi, who provided data on the male holotype in the collection of the Museum of Comparative Zoölogy at Harvard, states that the tibial apophysis is slightly shorter and the tegulum flatter than in *M. taeniola.*

Measurements of male holotype from Central America: Total

length, 4.70 mm. Carapace: length, 2.30 mm.; width, 1.56 mm.; height, 0.71 mm. Abdomen: length, 2.80 mm.; width, 1.20 mm. Patella and tibia: first leg, 1.57 mm.; second leg, 1.18 mm.; third leg, 1.04 mm.; fourth leg, 1.61 mm.

COMPARISONS: This species is intermediate in structure and size between *M. taeniola* and *M. floridana*. It differs from both species in its abdominal pattern. Like *M. floridana* the genitalia are similar to those of *M. taeniola*.

TYPE LOCALITY: The Peckhams' original description was based on a male and female from "Central America." The types are located in the Museum of Comparative Zoölogy at Harvard.

RECORDS: *Texas:* Cameron County, December 1934 (L. I. Davis), female. *Mexico:* Lake Catemaco, Veracruz, July 26, 1955 (C. and P. Vaurie), female.

Metacyrba undata (De Geer)

Figures 55–56, 62, 65, 67, 69

Aranea undata DE GEER, 1778, Mémoires pour servir à l'histoire des insectes, vol. 7, p. 320, pl. 39, fig. 8 (female).

Attus lentus WALCKENAER, 1873, Histoire naturelle des insectes, aptères, vol. 1, p. 466.

Attus familiaris HENTZ, 1845, Jour. Boston Soc. Nat. Hist., vol. 5, p. 354, pl. 21, fig. 7.

Attus rupicola HENTZ, 1845, *ibid.*, vol. 5, p. 357, pl. 21, fig. 14.

Marpissa undata, C. L. KOCH, 1846, Die Arachniden, vol. 13, p. 60, pl. 442, fig. 1127. EMERTON, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 237, pl. 19, fig. 3. SIMON, 1901, Histoire naturelle des araignées, vol. 2, p. 603. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 671. CHAMBERLIN AND IVIE, 1944, Bull. Univ. Utah, biol. ser., vol. 8, p. 202. KASTON, 1948, Bull. Connecticut State Geol. Nat. Hist. Surv., no. 70, p. 454, pl. 88, figs. 1636–1639, pl. 89, figs. 1655–1656. LEVI AND FIELD, 1954, Amer. Midland Nat., vol. 51, no. 2, p. 462.

Marpissa conspersa C. L. KOCH, 1846, Die Arachniden, vol. 13, p. 61, pl. 442, fig. 1127 (male).

Marpissa varia C. L. KOCH, 1846, *op. cit.*, vol. 13, p. 69, pl. 444, fig. 1134.

Salticus sundevalli BLACKWALL, 1846, Ann. Mag. Nat. Hist., ser. 1, vol. 17, p. 37.

Marptusa familiaris, PECKHAM AND PECKHAM, 1894, Occas. Papers Nat. Hist. Soc. Wisconsin, vol. 2, p. 87. EMERTON, 1902, Common spiders, p. 61, fig. 157.

Marpissa familiaris, F. O. P.-CAMBRIDGE, 1902, Biologia Centrali-Americana, Araneidea, vol. 2, p. 250, pl. 22, figs. 1–2.

MALE: Total length, 6.66–9.23 mm.

Carapace orange-brown. Sides and posterior declivity deep mahogany brown. Thickly covered with dark red and white hairs and margined with a thin white band of scales. Eyes surrounded with black and

clypeus thickly clothed with gray and white hairs. Chelicerae brown; endites and labium brown, with pale tips. Sternum deep straw color. Palps brown. Femora, patellae, and tibiae of legs brown mottled with straw. Metatarsus dark proximally and distally. Tarsi straw-colored. Dorsum of abdomen sooty gray, with a broad hastate pattern in anterior half which is followed by and continuous with a series of chevrons in the posterior half. This median pattern is sooty medially, becoming pale towards the margin. Venter with a very broad longitudinal band occupying almost entire width.

Carapace highest at posterior eye row, with a very gentle slope anterior and posterior to this point. Posterior declivity restricted to posterior one-sixth of carapace. Sides of carapace evenly rounded and widest just behind posterior eyes. Width of carapace 80 per cent of length and height, 44 per cent of width. Fang furrow with one tooth on posterior margin and two teeth on anterior margin. First leg twice as heavy as remaining legs.

Eyes of anterior row subcontiguous, with anterior medians slightly less than twice the diameter of the anterior laterals. Eyes of median row one-third of the diameter of the anterior laterals and located midway between posterior eyes and anterior laterals. Posterior eye row very slightly wider than anterior row (38:37) and eyes subequal to anterior laterals in size. Ocular area wider than long (38:30) and occupying approximately 40 per cent of carapace length.

Ventral spines on first leg: tibia, three on retrolateral, and four on prolateral, side; metatarsus, two pairs. Second leg: tibia, three pairs; metatarsus, two pairs.

Tibial apophysis of palp with a long slender projection extending almost half of the length of the cymbium. Ventral surface of palpal femur with a flat depression extending entire length and ending proximally in a spur.

Measurements of a male from Virginia: Total length, 9.23 mm. Carapace: length, 4.40 mm.; width, 3.50 mm.; height, 1.56 mm. Abdomen: length, 4.82 mm.; width, 2.64 mm. Patella and tibia: first leg, 4.94 mm.; second leg, 3.50 mm.; third leg, 2.82 mm.; fourth leg, 3.76 mm.

FEMALE: Total length, 6.06–11.36 mm.

Coloration, structure, and eye arrangement essentially as in male. Palps clothed with long white hairs. Epigynum as figured.

Measurements of a female from Illinois: Total length, 9.00 mm. Carapace: length, 3.98 mm.; width, 3.06 mm.; height, 1.54 mm. Abdomen: length, 5.00 mm.; width, 2.94 mm. Patella and tibia: first

leg, 3.24 mm.; second leg, 2.52 mm.; third leg, 2.36 mm.; fourth leg, 3.24 mm.

COMPARISONS: This species differs sharply from the *taeniola* group in coloration and in the structure of the genitalia. It is most closely related to *M. californica* but differs in that the tibial apophysis of the male palp is much longer and the length of the opening of the epigynum of the female is at least one-fifth of its width.

DISTRIBUTION: This very common species is found throughout the eastern half of the United States.

RECORDS: *Massachusetts:* Provincetown, August 25, 1870, two males; Woods Hole, July 18, 1901, male; Falmouth, September, 1940, male. *Connecticut:* New Haven, February 20, 1935 (B. J. Kaston), male; Griswold, March, 1936 (A. de Caprio), male; Rainbow, July 28, 1939 (A. de Caprio), female; New Caanan, July, 1950 (M. Statham), female. *New York:* Massapequa, Long Island, April 28, 1908, male; Glenwood, Tompkins County, August, 1920, male; Enfield Glen, August 23, 1925 (Wolf and Taub), female; Coram, Long Island, October 19, 1934, five males, female; Smithtown, Long Island, June 25, 1938 (Bell), male, female. *New Jersey:* Lakehurst, August, 1923, male; Ramsey, May 14, 1938 (L. Hook), female. *Pennsylvania:* Washington, August 1, 1929 (W. W. Long), female; Wilawana, August 20, 1937 (R. Crandall), male. *Maryland:* Easton, December 1, 1930 (H. S. McConnell), female; Forestville, June 5, 1935 (J. J. Queeney), female. *District of Columbia:* May, 1888 (Fox), three females. *Virginia:* Great Falls, December 16, 1934, nine males. *West Virginia:* Cranberry Glades, Pocahontas County, August 9, 1948 (K. W. Haller), female. *North Carolina:* Raleigh, December 15, 1923 (Mabee), five females, male; Smokemont, April 22, 1953 (H. Levi), male. *South Carolina:* Toddville, February 11, 1936, male. *Georgia:* Baker County, October 24, 1949 (R. E. Bellamy), female; Worth County, November 28, 1953 (H. K. Wallace), female. *Florida:* Gainesville, March 5, 1933, female; Mineral City, February 20, 1936, female; Gainesville, February 23, 1936 (H. K. Wallace), male; Welaka, Putnam County, May 3, 1947 (H. K. Wallace), male; Alachua County, December 10, 1947 (H. K. Wallace and K. Strawn), female; Marion County, January 19, 1948 (H. K. Wallace and K. Strawn), female; Duval County, March 24, 1948, male; Jackson County, April 4, 1953 (H. K. Wallace), female; Leesburg, Lake County, March 1–11, 1954 (M. Statham), male, three females. *Alabama:* Monte Sano, Madison County, July, 1939 (G. Briar), male, female; Mays Gulf, October 13, 1949 (J. H. Robinson), male; Eutaw, July 9, 1950 (M. Cazier), female. *Mississippi:* Moon, May 2, 1910, female; Humphrey County, October

27–29, 1937 (S. C. Bishop), male; Forest County, January, 1938, female; Hattiesburg, January 16–23, 1942 (E. L. Bell), three females; Centreville, 1944 (A. F. Archer), female; Hattiesburg, 1945–1946 (A. F. Archer), male. *Louisiana:* Ten miles east of Opalousas, August 12, 1938 (Davis), female, male; Kisatchie National Forest, Grant Parish, June, 1941 (Jones and Archer), two females; Shreveport, March 13, 1949 (J. H. Robinson), three males, female. *Tennessee:* Stow's River, 3 miles south of Shelbyville, July, 1943 (A. F. Archer), female. *Kentucky:* Hopkinsville, male. *Illinois:* Gillespie, August 25, 1944 (C. J. Goodnight), male, three females; Grayton, along river, September 3, 1944 (C. J. Goodnight), male, female. *Indiana:* Westfield, three males, female; Evansville, June, 1935 (W. Schartz), male. *Michigan:* Washtenaw County, August 15 to September 20, 1938, female. *Wisconsin:* Prairie du Chien, August 29, 1949 (M. Melanie), three males, three females. *Minnesota:* Minneapolis, June, 1932, male. *Nebraska:* Omaha, October 15, 1923 (O. Bryant), female. *Iowa:* Sioux City, 1939 (C. N. Ainslie), female. *Kansas:* Winfield, female; Lindsberg, summer, 1935 (E. N. Boline), male; Manhattan, August, 1945 (N. K. Krauss), two males. *Oklahoma:* Chickasha, April 27, 1927, female. *Texas:* Dallas, October 9, 1908, two females; Brownsville, January 5, 1928, male, female; Kerrville, Kerr County, December 10, 1954 (K. W. Haller), male, three females; 4 miles southeast of Edinburg, October 2, 1934 (S. Mulaik), male; Alice, June 20–28, 1935 (H. C. Sibley), female; south of Pharr, 1936 (M. Welch), male; east of Harlingen, January–March, 1936 (I. Davis), female; Portland, June, 1936 (S. Mulaik), female; Somerset, March 17, 1937 (A. J. Kirn), two females; Victoria, June 7, 1937 (S. Mulaik), female; Edinburg, February 5, 1939 (S. Mulaik), male; Hays County, April 15, 1939 (D. and S. Mulaik), male; Gatesville, September 15–30, 1942 (E. L. Bell), male; Abilene, summer, 1943 (Mary M. Wills), female; Camp Tonkawa, Crawford, April 18, 1943 (Ottys Sanders), female; Livingston, April 5, 1946 (C. D. Michener), male; Lufkin, May 8, 1952 (M. Cazier, W. Gertsch, R. Schrammel), female. *Ontario:* St. Thomas, August, 1928 (L. E. James), six females; Port Elgin, August 20, 1935 (Grieve), male. *Nova Scotia:* Granville Terry, immature male.

Metacyrba californica (Peckham and Peckham)

Figures 57–58, 61, 64, 68

Marptusa californica Peckham and Peckham, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 81, pl. 1, fig. 61, pl. 5, fig. 61, pl. 6, fig. 61 (male, female). Peckham and Peckham, 1894, Occas. Papers Nat. Hist. Soc. Wisconsin, vol. 5, p. 87.

Marpissa minor F. O. P.-Cambridge, 1901, Biologia Centrali-Americana, Araneida, vol. 2, p. 250, pl. 22, figs. 5–6 (male, female).

Marpissa melanura F. O. P.-CAMBRIDGE, 1901, *op. cit.*, vol. 2, p. 251, pl. 22, fig. 7 (female).

Marpissa californica, PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 670.

MALE: Total length, 6.24–7.12 mm.

Carapace orange-brown, with sides clothed with dark hairs. Ocular area darker and eyes surrounded by black. Long dark hairs between anterior lateral and median eyes and on clypeus. Chelicerae brown; endites and labium brown, with pale tips. Sternum yellowish. Legs brown to dark yellow, with darker mottling and flecks. Palps brown. Dorsum of abdomen with a dark brown ground color. Median pattern with five connected, diamond-shaped pale areas. The second, third, and fourth diamonds have the lateral points continued as pale lines extending over the sides and posteriorly. A pair of closely placed, double, dark lines are present in the first two diamonds. These are continued in the third as a pair of chevrons. Fourth diamond enclosing a pair of black spots. Venter slightly dusky. Anterior spinnerets pale; posterior dark.

Structure as in *M. undata.*

Eyes of anterior row subcontiguous, with anterior medians slightly less than twice the diameter of the anterior laterals. Eyes of median row two-fifths of the diameter of the anterior laterals and located either midway or slightly closer to the posterior eyes than to the anterior laterals. Posterior eye row as wide as anterior row, with eyes subequal to the anterior laterals in size. Ocular area wider than long (33:27) and occupying 45 per cent of carapace length.

Ventral spines of first legs: tibia, three pairs; metatarsus, two pairs. Second leg, same.

Tibial apophysis short and slender.

Measurements of a male from British Columbia: Total length, 7.06 mm. Carapace: length, 3.50 mm.; width, 2.76 mm.; height, 1.30 mm. Abdomen: length, 3.50 mm.; width, 2.24 mm. Patella and tibia: first leg, 3.00 mm.; second leg, 2.40 mm.; third leg, 2.24 mm.; fourth leg, 2.82 mm.

FEMALE: Total length, 9.38–10.64 mm.

Coloration essentially as in male. Femora of palps with a dorsal median and two lateral red-brown lines. Tibia and tarsus with a dorsal spot.

Structure and eye arrangement as in male. Spination as in male.

Epigynum with a very narrow, slit-like opening.

Measurements of a female from British Columbia: Total length,

9.12 mm. Carapace: length, 4.22 mm.; width, 2.94 mm.; height, 1.74 mm. Abdomen: length, 4.88 mm.; width, 2.70 mm.

COMPARISONS: This species is very closely related to *Metacyrba undata*. It differs from *M. undata* in having a very short tibial apophysis in the male and in the epigynum of the female, which has a narrow slit-like opening in contrast to that of *M. undata*.

TYPE LOCALITY AND DISTRIBUTION: The Peckhams' original description was based on specimens from "California." This species is found along the entire Pacific coast of North America where it replaces *Metacyrba undata*.

RECORDS: *Arizona:* Nogales, June, 1919, male; Prescott, June, 1920 (Barber and Schwartz), female; Tempe, April 20, 1950 (M. N. Frost), male. *California:* Bair's Ranch, Redwood Creek, Humbolt County (H. S. Barber), male, female; San Jose, female; Occidental, four females; Los Angeles, female; Claremont, May 15, 1936, male; Fall River Mills, Shasta County, July 16, 1941 (W. M. Pearce), male, three females; Bartle, July 21, 1941 (W. M. Pearce), female; 20 miles north of Canby, Modoc County, July 1–12 (W. M. Pearce), male, female; Lafayette, May 9, 1945 (E. G. Linsley), male; Riverside, June, 1946 (N. L. Krauss), female; Las Cresta, June 22, 1947 (W. M. Pearce), male; Hastings Natural History Reservation, Monterey County, July 7, 1950, two males, two females; Ash Mountain, Sequoia National Park, Tulare County (E. I. Schlinger), male; Glendora, May 18, 1951, male; Cedar Grove, Kings Canyon National Park, June 30, 1951 (H. Levi), male; Riverside, June, 1952 (N. L. Krauss), female; Riverton, July 11, 1952, female; Lake Almanor, July 7, 1952 (W. Gertsch), male. *Colorado:* Regnier, June 6–9, 1919, male; Glenwood Springs, July, 1939 (Ernst Mayr), female. *Wyoming:* Yellowstone National Park, August, 1931 (W. J. Gertsch), male. *Utah:* Salt Lake City (W. J. Gertsch), female; Little Cottonwood Canyon near Salt Lake City (W. J. Gertsch), six males; Richfield, July, 1930, two females; Logan, July 5, 1933 (Crosby), female; Salt Lake City, July, 1940 (W. J. Gertsch), female. *Oregon:* Corvallis, male, female; Lake Klamath, male, female; Rogue River Valley, April, 1934, female; Medford, October, 1934 (F. Lawrence), female; Cotton, July 20, 1935 (W. White), female; Eugene, July 1–13, 1941 (B. Malkin), female; McMinnville, October, 1948 (K. M. Fender), male; Little Applegate River, Jackson County, July 5–6, 1950 (B. Malkin and V. E. Thatcher), female. *Washington:* Yakima, June 17, 1934 (C. B. Philip), female; Friday Harbor, San Juan Island, July 12, 1954 (B. Malkin), male. *Idaho:* Twin Falls, July 31, 1931, female; Norman, August, 1931 (W. J. Gertsch), female; Boise, June 22, 1951 (H. Levi), male.

Montana: Gird's Creek, Ravaille County, June 3, 1934 (W. J. Gertsch), female. *British Columbia:* Wellington, Vancouver Island, May 31, 1949 (R. Guppy), male, female.

Metacyrba arizonensis, new species

Figures 59–60, 63

MALE: Total length, 5.50–6.50 mm.

Carapace reddish brown and thinly overlain with white hairs. Eyes surrounded by black. Clypeus with long white hairs which extend up between eyes of anterior row. Chelicerae brown, endites and labium brown, with pale tips. Sternum and legs light brown. Hind legs lighter, with light sooty blotches. Palps straw-colored. Coloration of abdomen similar to that in *M. californica,* although median pattern on dorsum is frequently less well defined. Venter sooty. Spinnerets pale.

Width of carapace approximately four-fifths of length. Height one-half of width, with highest point at level of posterior eye row. Posterior declivity in posterior one-third of carapace. Posterior margin of fang furrow of chelicerae with one tooth. Anterior margin with a ridge of two teeth. First leg twice the size of the remaining leg.

Eyes of anterior row subcontiguous, with anterior medians slightly less than twice the diameter of the anterior laterals. Eyes of median row one-fifth of the diameter of the anterior laterals and located approximately midway between the eyes of the posterior row and the anterior laterals. Posterior eyes subequal to the anterior laterals in size. First eye row wider than third (31:29). Ocular area wider than long (31:22) and occupying 45 per cent of carapace length.

Ventral spines of first leg: tibia, three pairs; metatarsus, two pairs. Second leg: same.

Palp as figured.

Measurements of male holotype from Arizona: Total length, 6.48 mm. Carapace: length, 2.94 mm.; width, 2.30 mm.; height, 1.18 mm. Abdomen: length, 3.50 mm.; width, 1.33 mm. Patella and tibia: first leg, 2.52 mm.; second leg, 2.12 mm.; third leg, 1.89 mm.; fourth leg, 1.95 mm.

FEMALE: Total length, 5:88–9.20 mm.

Coloration as in male. Structure and eye arrangement as in male. Spination as in male. Epigynum in the form of a broad triangle, with apex directed anteriorly.

Measurements of female allotype from Arizona: Total length, 9.20 mm. Carapace: length, 3.64 mm.; width, 2.82 mm.; height, 2.24 mm. Abdomen: length, 5.60 mm.; width, 3.56 mm. Patella and tibia: first

leg, 2.94 mm.; second leg, 2.52 mm.; third leg, 2.36 mm.; fourth leg, 3.06 mm.

COMPARISONS: This species is closely related to *M. californica.* The female differs in the shape of the epigynum; the male has a tibial apophysis which is similar to that of *M. californica,* but the former has a large heavy base under which there is a slit-like notch.

TYPE LOCALITY AND DISTRIBUTION: Male holotype and female allotype collected July–August, 1935, by P. Steckler from Tucson, Arizona. This species is found in the southwestern portion of the United States.

RECORDS: *New Mexico:* Juan Tabo area, Sandia Mountains, Bernalillo County (C. Clayton Hoff), female. *Arizona:* Catalina Springs, April, 1898, female. *California:* Hammil Station, Mono County, May 27, 1941 (W. M. Pearce), eight males, three females; Twenty-nine Palms, June 1945 (J. H. Branch), male. *Utah:* St. George, September, 1930 (Fox), male.

MENEMERUS SIMON

Menemerus SIMON, 1868, Ann. Soc. Ent. France, ser. 4, vol. 8, p. 662; 1876, Les arachnides de France, vol. 3, p. 30; 1937, *op. cit.,* vol. 6, pt. 5, pp. 1199, 1208, 1261.

Medium-sized jumping spiders (total length, 5.50–10.50 mm.) with relatively flat carapaces. Carapace width approximately 70 per cent of length and height between 50 per cent and 60 per cent of width. Anterior end of sternum as wide as base of labium.

Eyes of anterior row subcontiguous, with anterior medians a little less than twice the diameter of the anterior laterals. Median eyes closer to posterior eyes than to anterior laterals. Posterior eye row equal to anterior in length. Ocular area wider than long and occupying 45 per cent of carapace width.

First pair of legs at least twice as heavy as remaining legs. Order of leg length: 1:4:2:3 or 4:1:3:2. Ventral spines of anterior leg: tibia, three pairs; metatarsus, two pairs.

Embolus (E in fig. 70) of male palp large and heavy and fused for a greater part of its length to the tegulum (T). Apex of embolus bifurcated, one of the two tips perhaps representing the remnant of a guide. Tegulum sac-like and protruding. In contrast to *Marpissa* and *Metacyrba* the entire embolus is visible and not concealed by the tegulum when the palp is unexpanded.

Female genitalia (figs. 73, 74) with separate epigynal openings leading directly into a bursa. A short duct connects the latter with a second chamber.

Menemerus is a tropical and subtropical genus, with only two species represented in North America. It is closely related to *Metacyrba* and probably represents an offshoot from that genus.

Menemerus cruciferus Keyserling is a synonym of *Stoidis canosus* (Walckenaer).

Menemerus semilimbatus (Hahn)

Figures 70, 75

Attus semilimbatus Hahn, 1829, Monographie der Spinnen, vol. 5, pl. 18, fig. B. Walckenaer, 1837, Histoire naturelle des insectes, aptéres, vol. 1, p. 408.

Attus agilis Walckenaer, 1841, *op. cit.*, vol. 2, p. 464.

Salticus mauritanicus Lucas, 1846, Histoire naturelle des animaux articulés, *in* Exploration scientifique d'Algérie, Zoologie, pt. 1, p. 140, pl. 5, fig. 9.

Euophrys vigorata C. L. Koch, 1848, Die Arachniden, vol. 14, p. 14, figs. 1282, 1283.

Menemerus vigoratus, Simon, 1868, Ann. Soc. Ent. France, vol. 8, pt. 4, p. 663, pl. 7, fig. 4.

Salticus intentus Blackwall, 1869, Jour. Linnaean Soc. London, vol. 10, p. 413, pl. 15, fig. 5.

Menemerus semilimbatus, Simon, 1871, Ann. Soc. Ent. France, vol. 1, pt. 5, p. 337; 1876, Les arachnides de France, vol. 3, p. 32, pl. 11, fig. 10; 1901, Histoire naturelle des araignées, vol. 2, pt. 3, pp. 603, 611, fig. 729; 1937, Les arachnides de France, vol. 6, pt. 5, pp. 1209, 1261, figs. 1929–1931. Peckham and Peckham, 1894, Occas. Papers Nat. Hist. Soc. Wisconsin, vol. 2, pt. 2, p. 106, pl. 10, fig. 5. Bacelar, 1929, Bull. Soc. Portugaise Sci. Nat., vol. 10, pt. 21, p. 255, figs. 8, 9.

This species, which is the genotype and closely related to the well-known *bivittatus,* has a wide distribution in southern Europe and northern Africa in the entire Mediterranean region.

Menemerus bivittatus (Dufour)

Figures 71–74

Salticus bivittatus Dufour, 1831, Ann. Sci. Nat., Paris, p. 15, pl. 2, fig. 5.

Attus cinctus Walckenaer, 1837, Histoire naturelle des insectes, aptères, vol. 1, p. 430.

Salticus melanognathus Lucas, 1839, *in* Webb and Berthelot, Histoire naturelle des îles Canaries, vol. 2, p. 29, pl. 7, fig. 4.

Marpissa dissimilis C. L. Koch, 1846, Die Arachniden, vol. 13, p. 70, pl. 444, figs. 1135–1136.

Marpissa incerta C. L. Koch, 1846, *op. cit.*, vol. 13, p. 73, pl. 444, fig. 1138.

Salticus convergens Doleschall, 1859, Tweede Bijdrage tot de kennis der Arachniden van der Indischen Archipel, p. 15, pl. 9, fig. 4.

Attus muscivorus Vinson, 1863, Aranéides des îles de La Reunion, Maurice et Madagascar, p. 47, pl. 10, fig. 1.

Attus foliatus L. Koch, 1867, Verhandl. Zool. Bot. Gesell. Wien, p. 226.

Salticus nigro-limbatus O. P.-CAMBRIDGE, 1870, Proc. Zool. Soc. London, p. 542, pl. 42, fig. 10.

Attus planus TACZANOWSKI, 1871, Horae Soc. Ent. Rossicae, vol. 8, p. 49.

Marpissa nigrolimbata, SIMON, 1876, Les arachnides de France, vol. 3, p. 29.

Icius convergens, THORELL, 1878, Studi sui Ragni Malesi e Papuani, vol. 2, pp. 232, 309.

Marpissa plana, TACZANOWSKI, 1878, Bull. Soc. Nat. Moscow, p. 324.

Marptusa marita KARSCH, 1879, Zeitschr. f. Ges. Naturwiss., vol. 52, p. 358.

Menemerus foliatus, L. KOCH, 1879, Die Arachniden Australiens, p. 1123, pl. 98, figs. 1–2.

Icius dissimilis, THORELL, 1881, Studi sui Ragni Malesi e Papuani, vol. 3, p. 461.

Attus mannii PECKHAM AND PECKHAM, 1883, Descriptions of new or little known Attidae, p. 27, pl. 3, fig. 21.

Menemerus melanognathus, SIMON, 1883, Ann. Soc. Ent. France, ser. 6, vol. 3, pp. 284, 306. PECKHAM AND PECKHAM, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 82, pl. 1, fig. 62, pl. 6, fig. 62. STRAND, 1907, Jahrb. Nassauischen Ver. Naturk., vol. 6, p. 227.

Marpissa melanognatha, F. O. P.-CAMBRIDGE, 1901, Biologia Centrali-Americana, Araneidea, vol. 2, p. 250, pl. 21, figs. 18–19. PECKHAM AND PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 483, pl. 39, fig. 3.

Marpissa bivittata, SIMON, 1901, Histoire naturelle des araignées, vol. 2, pp. 603–604, 611. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 672.

MALE: Total length, 5.54–7.25 mm.

Carapace reddish brown and margined with a thin black line and a submarginal band of white hairs. The latter is absent along the posterior margin. Ocular area dark except for an anterior extension of reddish brown at level of third eye row which is thinly covered by white hairs. Anterior eyes surrounded by short reddish hairs. Chelicerae red-brown, with a median tuft of white hairs. Labium and endites red-brown, with pale tips. Sternum sooty brown. Coxae brown, with pale blotches at proximal ends. Legs brown, with lateral sides darker. All legs with scattered white hairs. Palps brown, with femora covered with white hairs and patella and tibia with prolateral tufts of white hairs. Dorsum of abdomen dirty gray, with a darker anterior median hastate mark ending in a pair of pale spots. This hastate mark is frequently flanked by prominent bands of white hairs. Venter sooty and paler laterally. Spinnerets sooty.

Carapace relatively flat, with posterior declivity confined to posterior quarter of length. Sides of carapace evenly rounded, with widest point just behind posterior eye row. Width of carapace approximately four-fifths of length (41:53). Height approximately one-half of width (22:41). Chelicerae with a single tooth on both anterior and posterior margin at fang furrow. First pair of legs twice as heavy as remaining legs.

Eyes of anterior row subcontiguous, with anterior medians slightly less than twice the diameter of the anterior laterals. Eyes of median row one-fifth of the diameter of the anterior laterals and located closer to the posterior eyes than to the anterior laterals. Posterior eye row as wide as anterior row and eyes equal to the anterior laterals in size. Ocular area wider than long (29:24) and occupying 45 per cent of carapace length.

Ventral spines of first leg: tibia, three pairs; metatarsus, two pairs. Second leg: tibia, one pair of distals and one unpaired proximal; metatarsus, two pairs.

Palp as figured.

Measurements of a male from Texas: Total length, 7.06 mm. Carapace: length, 3.12 mm.; width, 2.40 mm.; height, 1.30 mm. Abdomen: length, 3.92 mm.; width, 2.24 mm. Patella and tibia: first leg, 2.82 mm.; second leg, 2.24 mm.; third leg, 1.89 mm.; fourth leg, 2.52 mm.

FEMALE: Total length, 7.06–10.20 mm.

Coloration essentially as in male. Palps covered with long white hairs. Structure, spination, and eye arrangement as in male. Epigynum as figured.

Measurements of a female from Texas: Total length, 7.06 mm. Carapace: length, 3.12 mm.; width, 2.30 mm.; height, 1.18 mm. Abdomen: length, 4.10 mm.; width, 2.40 mm. Patella and tibia: first leg, 2.18 mm.; second leg, 1.83 mm.; third leg, 1.76 mm.; fourth leg, 2.52 mm.

COMPARISONS: This species is easily differentiated from other North American members of the Marpissinae by the coloration and structure of the genitalia.

DISTRIBUTION: *Menemerus bivittatus* is a tropical and subtropical species which extends into the southern portions of the United States.

RECORDS: *North Carolina:* Burlington, May 20, 1934 (H. K. Wallace), male. *Florida:* Miami, February–March, 1903 (J. H. Comstock), two males; Gainesville, January 1, 1933 (H. K. Wallace), female; St. Petersburg, February 28, 1935 (R. L. Lugles); Naples, January 27 to February 6, 1946 (S. Rounds), four males, four females; Welaka Reserve, Putnam County, June 2, 1947, male; Duval County, April 29, 1949, male. *Louisiana:* Baton Rouge, March 20–23, 1903 (J. H. Comstock), male, female. *West Virginia:* Minnehaha Springs, Pocahontas County, July, 1948 (K. H. Haller), male. *Texas:* Edinburg, December 24, 1933 (S. Mulaik), two males, female; Kingsville, November 3–4, 1934 (S. Mulaik), two males; Port Isabel, November, 1945 (N. L. H. Krauss), male; Brownsville, December 2, 1945 (F. M. Packard), female. *California:* Dulzura, San Diego County, July 7, 1947 (W. M. Pearce), male; Hous-

tonia, San Diego County, March 20, 1948 (W. M. Pearce), female. *Puerto Rico:* Rio Piedras, May 5, 1931 (A. S. Mills), male; Manat, June 12, 1931 (A. S. Mills), female. *Mexico:* Desemboque, Sonora, August, 1953 (B. Malkin), female; Villahermosa, Tabasco, October, 1954 (N. L. H. Krauss), three males; Carmen, Campeche, October, 1954 (N. L. H. Krauss), male, female; Veracruz, Veracruz, November, 1954 (N. L. H. Krauss), male, female; Chetumal, Quintano Roo, July, 1955 (N. L. H. Krauss), male, female. *Costa Rica:* San José, December 12, 1955 (B. Malkin), male.

Menemerus vittatus (Banks)

Figure 66

Fuentes vittata BANKS, 1902, Proc. Acad. Nat. Sci. Philadelphia, p. 590, pl. 33, fig. 20 (female).

Menemerus vittatus, PECKHAM AND PECKHAM, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 484, pl. 39, fig. 4. PETRUNKEVITCH, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 673.

FEMALE: Total length, 5.70 mm.

"When dry the integument is dark brown, blackish in eye region, with a thin covering of white hairs, and a whitish stripe on the middle of the abdomen. Under alcohol the pattern comes out more distinctly, the spider being grey with a lighter longitudinal band on the abdomen, from base to apex, which is edged with a series of short, pure white hairs, outlined in black. On the posterior sides are some oblique whitish bars. The first legs are brown, with incomplete dark rings, the others yellow, with dark bands. The clypeus has long white hairs" (Peckham and Peckham, 1909).

Carapace flat, with a slight slope forward from median eye row. Width of carapace 70 per cent of length, with widest point just behind posterior eye row. Height of carapace 58 per cent of width, with highest point at level of posterior eye row. Furrow of chelicerae with two teeth on anterior margin and one tooth on posterior margin.

Eyes of anterior row subcontiguous, with anterior laterals three-fourths of the diameter of the anterior medians. Eyes of median row one-fourth of the diameter of the anterior laterals and located slightly closer to the posterior eyes than to the anterior laterals.

Ventral spines of first leg: tibia, three pairs; metatarsus, two pairs. Second leg: tibia, one unpaired median and one pair of distals; metatarsus, two pairs.

Epigynum a deep depression with a swollen posterior lip; two black spots in depression and a shadow between black spots and lip.

Measurements of female holotype: total length, 5.70 mm. Carapace:

length, 2.40 mm.; width, 1.70 mm.; height, 1.00 mm. Patella and tibia: first leg, 1.80 mm.; second leg, 1.30 mm.; third leg, 1.20 mm.; fourth leg, 1.80 mm.

TYPE LOCALITY: Banks's description was based on a female holotype and female paratype from Albuquerque, New Mexico.

The author was unable to examine specimens of this species and is indebted to Dr. Herbert Levi of the Museum of Comparative Zoölogy for providing measurements of the holotype and a figure of the epigynum.

This species is tentatively placed in *Menemerus*. Its correct position in the Marpissinae must await the discovery of the male.

MAEVIA C. L. KOCH

Maevia C. L. KOCH, 1850, Uebersicht des Arachnidensystems, vol. 5, p. 50. Genotype: *Maevia inclemens* (Walckenaer).

Salticid spiders of medium size. Carapace moderately high, between 60 per cent and 70 per cent of width. Lateral margins evenly rounded, with the widest point just behind the posterior eye row. Integument not hairy and only sparsely covered with hairs and scales. Middle eye row halfway between first and third rows or slightly closer to third row. First eye row only slightly wider than third, the latter occupying about 75 per cent of the width of the carapace at that point. Ocular area occupying between 40 per cent and 50 per cent of carapace. Chelicerae with a single compound tooth on retromargin and two denticles on promargin. Anterior end of sternum narrower than labium. First pair of legs not markedly heavier and only slightly shorter than fourth pair. Order of length: 4:1:2:3. Legs not hairy. First tibia with four pairs of ventral spines. Other spines variable.

Male palp with a long thin embolus partially encircling the tegulum and lying just within the margin of the alveolus. Epigynum with a tiny median opening eight to 10 times its diameter anterior to the epigastric furrow. The opening leads into a pair of coiled tubules.

Maevia inclemens (Walckenaer)

Attus inclemens WALCKENAER, 1837, Histoire naturelle des insectes, aptères, vol. 1, p. 465, figs. 413, 464.

Attus vittatus HENTZ, 1845, Jour. Boston Soc. Nat. Hist., vol. 5, p. 360, pl. 21, fig. 23 (male, female).

Attus niger HENTZ, 1845, *ibid.*, vol. 5, p. 359, pl. 21, fig. 19 (male).

Plexippus undatus C. L. KOCH, 1846, Die Arachniden, vol. 13, p. 123, fig. 118 (male).

Maevia pencillata C. L. KOCH, 1848, *op. cit.*, vol. 14, p. 69, fig. 1325 (male).

Astia vittata, Peckham and Peckham, 1888, Trans. Wisconsin Acad. Sci., vol. 7, p. 70, pl. 1, fig. 52 (male, female).

Maevia vittata, Emerton, 1891, Trans. Connecticut Acad. Sci., vol. 8, p. 236, pl. 19, fig. 1. Simon, 1903, Histoire naturelle des arraignées, vol. 2, p. 849, figs. 994–996. Peckham and Peckham, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 452, pl. 49, fig. 7, pl. 51, fig. 8 (male, female). Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 668. Comstock, 1940, The spider book, rev. ed., p. 702, figs. 761–763 (male, female). Kaston, 1948, Bull. Connecticut Geol. Nat. Hist. Surv., no. 70, p. 495, figs. 1858–1860, 1871–1873 (male, female). Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 2–5, figs. 1, 4, 7–8 (male, female).

Maevia inclemens, Chamberlin and Ivie, 1944, Bull. Univ. Utah, biol. ser., vol. 8, no. 5, p. 202.

Maevia intermedia Barnes

Maevia intermedia Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 5–6, figs. 2, 5–6 (male, female).

Maevia expansa Barnes

Maevia expansa Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 6–7, figs. 3, 9 (male, female).

PARAMAEVIA, NEW GENUS

Maevia C. L. Koch, 1850, Uebersicht des Arachnidensystems, vol. 5, p. 50. Genotype: *Maevia inclemens* (Walckenaer).

Paramaevia Barnes, 1955, Amer. Mus. Novitates, no. 1746, p. 7 (new subgenus in *Maevia*). Genotype: *Maevia poultoni* Peckham and Peckham.

Structure as in *Maevia*. Embolus of male palp heavy, arched above tegulum, and equally or unequally divided. Epigynum with a large median circular opening or pit which opens into a bursa on each side.

Paramaevia poultoni (Peckham and Peckham)

Maevia poultoni Peckham and Peckham, 1902, Trans. Wisconsin Acad. Sci., vol. 13, p. 344, pl. 25, fig. 15, pl. 26, fig. 3 (male, female). Simon, 1903, Histoire naturelle des araignées, vol. 2, p. 848. Peckham and Peckham, 1909, Trans. Wisconsin Acad. Sci., vol. 16, p. 451, pl. 49, fig. 8 (male, female). Petrunkevitch, 1911, Bull. Amer. Mus. Nat. Hist., vol. 29, p. 668. Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 7–9, figs. 10–12 (male, female).

Plexippus vittatus Banks, 1905, Proc. Ent. Soc. Washington, vol. 7, p. 100, pl. 2, fig. 6.

Paramaevia hobbsae (Barnes)

Maevia hobbsi Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 9–10, figs. 13–15 (male, female).

Paramaevia michelsoni (Barnes)

Maevia michelsoni Barnes, 1955, Amer. Mus. Novitates, no. 1746, pp. 10–11, figs. 16–18.

LITERATURE CITED

BARNES, R. D.
1953. The ecological distribution of spiders in non-forest maritime communities at Beaufort, North Carolina. Ecol. Monogr., vol. 23, no. 4, pp. 315–337.

BARNES, R. D., AND B. M. BARNES
1955. The spider population of the abstract broomsedge community of the southeastern piedmont. Ecology, vol. 36, no. 4, pp. 658–666.

GERTSCH, W. J.
1936. Further diagnoses of new American spiders. Amer. Mus. Novitates, no. 852, pp. 1–27.

LEVI, H. W., AND H. M. FIELD
1954. The spiders of Wisconsin. Amer. Midland Nat., vol. 51, no. 2, pp. 440–467.

LOWRIE, D. C.
1942. The ecology of the spiders of the xeric dunelands in the Chicago area. Bull. Chicago Acad. Sci., vol. 6, no. 9, pp. 161–189.

MUMA, M. H., AND K. E. MUMA
1949. Studies on a population of prairie spiders. Ecology, vol. 30, no. 4, pp. 485–503.

PECKHAM, G. W., AND E. G. PECKHAM
1909. Revision of the Attidae of North America, Trans. Wisconsin Acad. Sci., vol. 16, pp. 355–646.